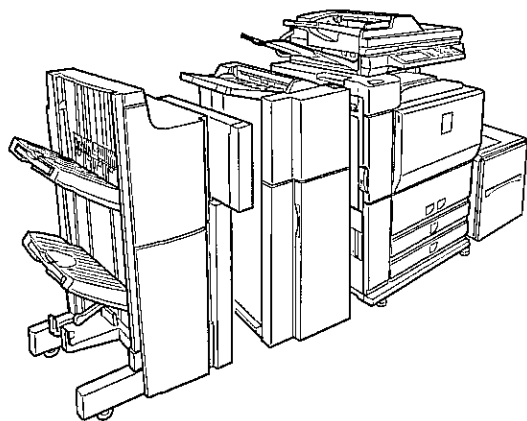


SHARP SERVICE MANUAL

CODE: 00ZAR700//F1E

DIGITAL LASER COPIER/PRINTER
DIGITAL MULTIFUNCTIONAL SYSTEM



AR-M550N/M550U
AR-M620N/M620U
MODEL AR-M700N/M700U

CONTENTS

| | |
|---|------|
| [1] OUTLINE | 1-1 |
| [2] CONFIGURATION | 2-1 |
| [3] SPECIFICATIONS | 3-1 |
| [4] CONSUMABLE PARTS | 4-1 |
| [5] EXTERNAL VIEW AND INTERNAL STRUCTURE | 5-1 |
| [6] DETAILS OF EACH SECTION | 6-1 |
| [7] SETTING AND ADJUSTMENTS | 7-1 |
| [8] SIMULATION | 8-1 |
| [9] SELF DIAG MESSAGE AND TROUBLESHOOTING | 9-1 |
| [10] ROM VERSION-UP METHOD | 10-1 |
| [11] MAINTENANCE LIST | 11-1 |
| [12] OTHER | 12-1 |
| [13] ELECTRIC DIAGRAM | 13-1 |
| [14] SIGNAL NAME LIST | 14-1 |

Parts marked with "△" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

This document has been published to be used
for after sales service only.
The contents are subject to change without notice.

CAUTION

This product is a class 1 laser product that complies with 21CFR 1040 of the CDRH standard and IEC825. This means that this machine does not produce hazardous laser radiation. The use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This laser radiation is not a danger to the skin, but when an exact focusing of the laser beam is achieved on the eye's retina, there is the danger of spot damage to the retina.

The following cautions must be observed to avoid exposure of the laser beam to your eyes at the time of servicing.

- 1) When a problem in the laser optical unit has occurred, the whole optical unit must be exchanged as a unit, not as individual parts.
- 2) Do not look into the machine with the main switch turned on after removing the developer unit, toner cartridge, and drum cartridge.
- 3) Do not look into the laser beam exposure slit of the laser optical unit with the connector connected when removing and installing the optical system.
- 4) The middle frame contains the safety interlock switch.

Do not defeat the safety interlock by inserting wedges or other items into the switch slot.

**CLASS 1
LASER PRODUCT**

LASER KLASSE 1

Wave length: 785 nm ± 10 nm
Pulse times: -15 nm
North America: 55 cpm model (3.1 μ s \pm 3.1 ns)/7 mm
62 cpm model (3.1 μ s \pm 3.1 ns)/7 mm
70 cpm model (2.7 μ s \pm 2.7 ns)/7 mm
Europe: 55 cpm model (3.7 μ s \pm 3.7 ns)/7 mm
62 cpm model (3.7 μ s \pm 3.7 ns)/7 mm
70 cpm model (3.2 μ s \pm 3.2 ns)/7 mm
Output power: Max 0.8 mW

CAUTION

INVISIBLE LASER RADIATION,
WHEN OPEN AND INTERLOCKS DEFEATED.
AVOID EXPOSURE TO BEAM.

VORSICHT

UNSICHTBARE LASERSTRAHLUNG,
WENN ABDECKUNG GEÖFFNET UND
SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT.
NICHT DEM STRAHL AUSSETZEN.

VARO !

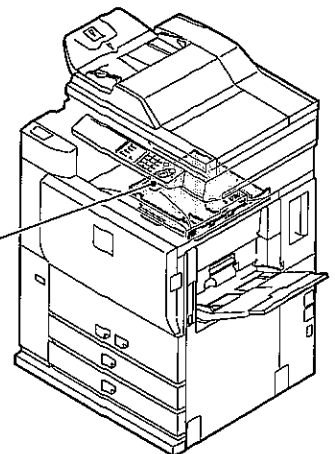
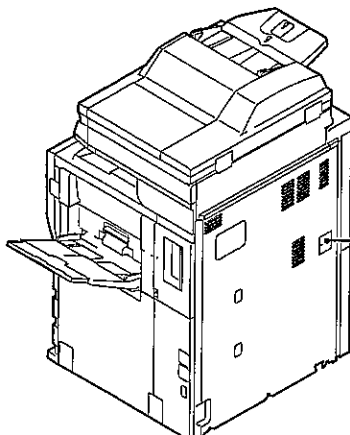
AVATTAESSA JA SUOJALUKITUS
OHITETTAESSA OLET ALTTIINA
NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ
KATSO SÄTEESEEN.

ADVARSEL

USYNLIG LASERSTRÅLNING VED ÅBNING, NÅR
SIKKERHEDSBRYDERE ER UDE AF
FUNKTION. UNDGÅ UDSEÆTTELSE FOR
STRÅLNING.

VARNING !

OSYNLIG LASERSTRÅLNING NÅR DENNA DEL
ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD.
BETRAKTA EJ STRÅLEN. – STRÅLEN ÄR
FARLIG.



**CLASS 1
LASER PRODUCT**

LASER KLASSE 1

CONTENTS

[1] OUTLINE

1. Main Features 1-1
2. Features 1-1
 - A. High reliability 1-1
 - B. Network tandem 1-1
 - C. 2-Way Security Solution 1-2
 - D. Document Filing 1-3

[2] CONFIGURATION

1. Main unit and option lineup 2-1
2. Block diagram 2-2

[3] SPECIFICATIONS

1. Basic specifications 3-1
 - A. Main unit 3-1
2. Engine specifications 3-2
 - A. Paper feeding, paper conveyance, and discharge section 3-2
 - B. Scanner section (read) 3-3
 - C. Scanner section (write) 3-4
 - D. Image processing section 3-4
 - E. Fuser section 3-4
 - F. Drive section 3-4
3. Operating specifications 3-5
 - A. Common operations 3-5
 - B. Copy mode 3-7
 - C. Image send function 3-9
 - D. Printer function 3-11
 - E. Document filing function 3-14
4. Safety and environmental protection standards 3-15
 - A. Safety standards 3-15
 - B. Environmental standards 3-15
5. Ambient conditions 3-15
 - A. Space required 3-15
 - B. Operating ambient conditions 3-15
 - C. Ambient storage conditions 3-15
 - D. Ambient conditions for transporting 3-16
 - E. Standard temperature and humidity 3-16
6. Service related items 3-16

[4] CONSUMABLE PARTS

1. Supply system table 4-1
 - A. USA, Canada, South and Central America 4-1
 - B. Europe affiliates (Including East Europe, Russia)/Australia/New Zealand/UK 4-1
 - C. Asia affiliates 4-1
 - D. Hong Kong 4-1
 - E. China (AR-M620N/M700N) 4-1
 - F. Middle East/Philippine 4-2
 - G. Taiwan 4-2
2. Maintenance parts list 4-2
 - A. USA, Canada 4-2
 - B. Europe affiliates (Including East Europe, Russia)/Australia/New Zealand/UK 4-3
 - C. Middle East/Asia/South and Central America 4-4
 - D. China 4-5
 - E. Taiwan 4-6

[5] EXTERNAL VIEW AND INTERNAL STRUCTURE

1. External view and operation parts 5-1
 - A. External view and external operation parts 5-1
 - B. Internal operation parts 5-2
 - C. Operation, display parts 5-3
 - D. Job status screen (common to print, copy, network scan and internet fax) 5-4
2. Function parts 5-6
 - A. Sensor/detector 5-6
 - B. Switch 5-10
 - C. Clutch/solenoid 5-11
 - D. Motor 5-12
 - E. Lamp 5-14
 - F. Fan motor 5-15
 - G. PWB (Main unit section) 5-16
 - H. FAX section 5-17
 - I. Fuse/thermostat 5-18
 - J. Adjustment volume 5-19
 - K. Gate 5-20
 - L. Heater 5-20
 - M. Lock position 5-21
 - N. Roller 5-22
 - O. Filter 5-24

[6] DETAILS OF EACH SECTION

1. Operation panel section 6-2
 - A. General 6-2
 - B. Major parts and signal functions 6-2
 - C. Maintenance and parts replacement 6-3
2. Paper feed, paper transport, duplex, and paper exit reverse sections 6-5
 - [Paper feed section] 6-5
 - (Manual paper feed section) 6-6
 - (Paper feed tray sections 1 and 2) 6-13
 - (Paper feed trays 3 and 4) 6-20
 - [Paper Transport Section] 6-30
 - (Vertical paper transport section 1) 6-30
 - (Vertical paper transport section 2) 6-34
 - (Horizontal transport section) 6-39
 - [Paper exit and turning section] 6-44
 - (Duplex section) 6-49
3. Laser scan unit (LSU) 6-60
4. Image process section 6-63
 - [Toner hopper and toner bottle section] 6-64
 - [Developer tank section] 6-69
 - [OPC drum section] 6-74
 - [Transfer section] 6-82
 - [Main charger section] 6-87
5. Scanner section 6-89
6. Fusing section 6-101
7. SPF section 6-113
 - [External outfit section] 6-114
 - [Paper feed tray section] 6-116
 - [Paper feed/transport section] 6-119
 - [CIS section] 6-125
 - [Paper exit section] 6-127
 - [Other] 6-131
8. Drive section 6-133

| | |
|---|-------|
| 9. Filters | 6-146 |
| 10. PWB section | 6-147 |
| 11. Power section | 6-151 |
| 12. Fan motors | 6-153 |
| 13. Sensors and switches | 6-158 |
| [7] SETTING AND ADJUSTMENTS | |
| [ADJ 1] Adjusting high voltage values | 7-2 |
| [ADJ 2] Adjusting the developing unit | 7-6 |
| [ADJ 3] Adjusting image distortions | 7-7 |
| [ADJ 4] Adjusting the SPF parallelism | 7-12 |
| [ADJ 5] Adjusting the image focus | 7-14 |
| [ADJ 6] Adjusting the image magnification | 7-16 |
| [ADJ 7] Adjusting the image off-center | 7-21 |
| [ADJ 8] Adjusting the image position, image loss, and void area | 7-25 |
| [ADJ 9] Adjusting the copied image quality | 7-30 |
| [ADJ 10] Adjusting the print quality in fax mode | 7-33 |
| [ADJ 11] Adjusting the image quality in scan mode | 7-36 |
| [ADJ 12] Common image quality adjustments for all of copy, scan, and fax modes | 7-38 |
| [ADJ 13] Adjusting the fusing paper guide position | 7-39 |
| [ADJ 14] Adjusting the paper size detection | 7-40 |
| [ADJ 15] Adjusting the original size detection (in original table mode) | 7-42 |
| [ADJ 16] Adjusting the touch panel coordinates | 7-43 |
| [ADJ 17] Adjusting the supply voltage | 7-43 |
| [8] SIMULATION | |
| 1. Adjustment value/Simulation and storage data | 8-1 |
| A. Simulation adjustment value/Set value data | 8-1 |
| B. Each storage data | 8-1 |
| 2. Outline and purpose | 8-6 |
| 3. Code-type simulation | 8-6 |
| A. Operating procedures and operations | 8-6 |
| B. Simulation list | 8-8 |
| C. Details | 8-20 |
| [9] SELF DIAG MESSAGE AND TROUBLESHOOTING | |
| [Error code] | 9-1 |
| 1. General | 9-1 |
| 2. Function and purpose | 9-1 |
| 3. Self diag message kinds | 9-1 |
| 4. Self diag operation | 9-1 |
| A. Self diag operation and related work flow | 9-1 |
| 5. Breakdown sequence | 9-2 |
| A. Breakdown mode process | 9-2 |
| B. Power ON trouble detection sequence | 9-3 |
| 6. Communication in trouble | 9-4 |
| A. FAX call request/call-in specifications | 9-4 |
| 7. Trouble kind | 9-4 |
| 8. Details | 9-7 |

[10] ROM VERSION-UP METHOD

| | |
|---|-------|
| 1. General | 10-1 |
| A. Version-up target ROM's | 10-1 |
| B. ROM version-up is required in the following cases: | 10-1 |
| 2. Precautions | 10-2 |
| A. Relationship between each ROM and version-up | 10-2 |
| 3. Necessary items for Flash ROM version-up | 10-2 |
| 4. Flash ROM version-up method | 10-2 |
| A. MFP control PWB ROM DIP switch selection and Flash ROM slot | 10-2 |
| B. Operation panel | 10-2 |
| C. Version-up procedure | 10-13 |
| D. Version-up procedure | 10-23 |
| E. Countermeasures against "Result: NG" | 10-4 |
| 5. Turning OFF the power during the version-up procedure | 10-5 |
| 6. Version-up procedure flowchart | 10-5 |

[11] MAINTENANCE LIST

| | |
|--|-------|
| 1. Maintenance list | 11-1 |
| 2. Details | 11-4 |
| A. Drum peripheral section | 11-4 |
| B. Transfer section | 11-5 |
| C. Developing section | 11-6 |
| D. Fusing section | 11-7 |
| E. Scanner section | 11-9 |
| F. SPF section | 11-10 |
| G. Paper feed section | 11-11 |
| H. Transport section/paper exit reverse section/ duplex section | 11-12 |
| I. Drive section | 11-13 |
| J. Filters | 11-14 |
| 3. Maintenance and disassembly | 11-15 |
| A. Necessary execution items in maintenance and servicing | 11-15 |

[12] OTHER

| | |
|---|-------|
| 1. VARIOUS COUNTERS SPECIFICATIONS | 12-1 |
| A. Count specification | 12-1 |
| B. Location and display of each counter data | 12-5 |
| 2. Web setting service mode | 12-7 |
| A. Outline | 12-7 |
| B. Operating procedures | 12-7 |
| C. Details | 12-7 |
| 3. Paper jam code | 12-9 |
| A. Paper jam judgment conditions | 12-9 |
| B. Inserter (AR-CF2) paper jam judgment conditions | 12-13 |
| C. Finisher (AR-F15/F16) paper jam judgment conditions | 12-14 |

[13] ELECTRIC DIAGRAM

| | |
|--------------------------------|-------|
| 1. Overall block diagram | 13-1 |
| 2. Power line chart | 13-2 |
| 3. Actual wiring chart | 13-5 |
| A. Engine | 13-5 |
| 4. Scanner | 13-13 |

[14] SIGNAL NAME LIST

| |
|------|
| 14-1 |
|------|

[1] OUTLINE

1. Main Features

(1) Single Pass Duplex Scanner

- Max. 76 cpm for duplex scanning
- Best-in-class 150-sheet feeder

(2) Security Solution

Data encryption + data clear with random number

- Network security

(3) New Toner

- Higher density/Finer particles

(4) Inner Output

- Separate copy output pages from printer output pages

(5) Enhance the solutions such as document filing and other features.

(6) Design for High Reliability

- Robust frame designed by highly accurate CAE analysis

(7) Improved Performance

- Network Tandem Copy/Print
- High-speed Processor
- New high-speed ASIC

(8) Fax feature

For replacement of mid/low speed devices (up to area)

(9) Large Capacity Finisher

Finisher capacity: 4,000-sheet

2. Features

A. High reliability

(1) Improved Image Quality/Paper Transport

Full-Grip Path Design

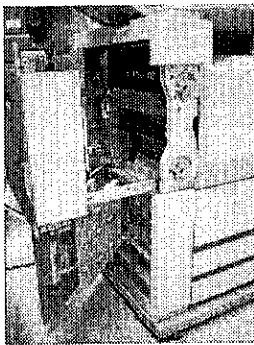
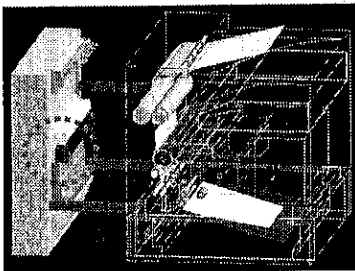
Stable paper feeding realized by rollers that firmly grip paper

Small-Diameter Belt Transfer System

With reduced effect to paper types, drum paper release is stabilized and transfer efficiency is improved

Easier Paper Jam Fixation with Open Paper Path

Jammed paper on vertical paper path can be easily removed by opening the left side cover, which shortens time to fix paper jam



(2) Strengthened Frame Structure

Highly Rigid Frame

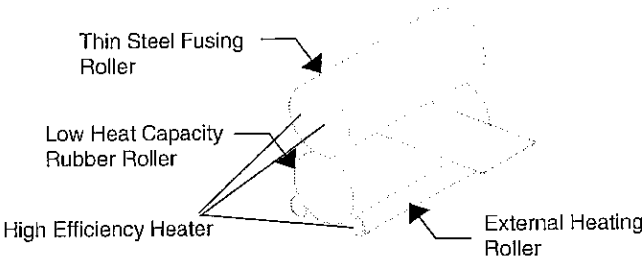
Improved stability with less machine distortion, and both rigidity and lightweight been achieved.

(3) Energy Saving with Unique External Heat Roller Fusing System

Newly Developed External Heating System

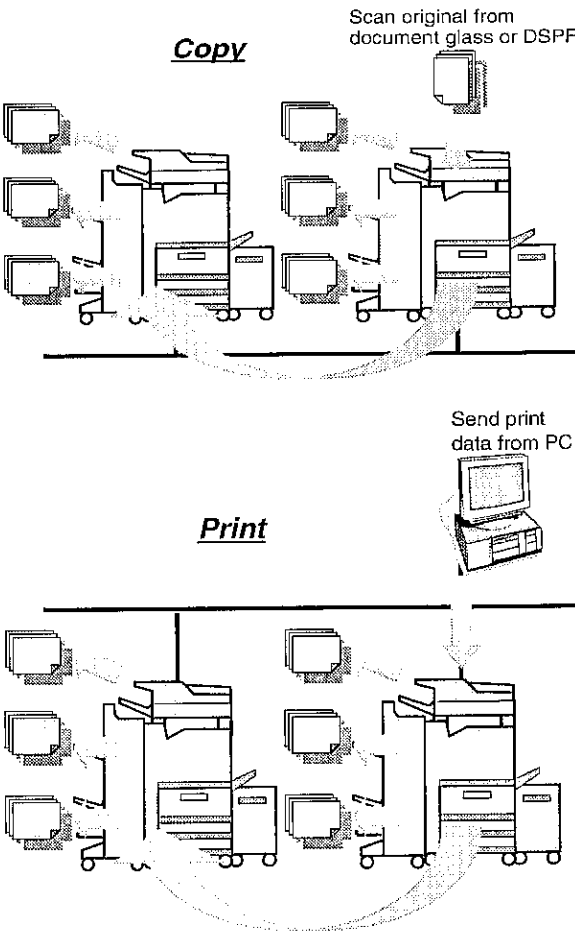
- 1) High reliability with stabilized fusing ability
- 2) Shortened warm up time before start copying
- 3) Achievement of energy efficiency that clears 2006 Rationalization in Energy Use Law

External Heat Roller Fusing System



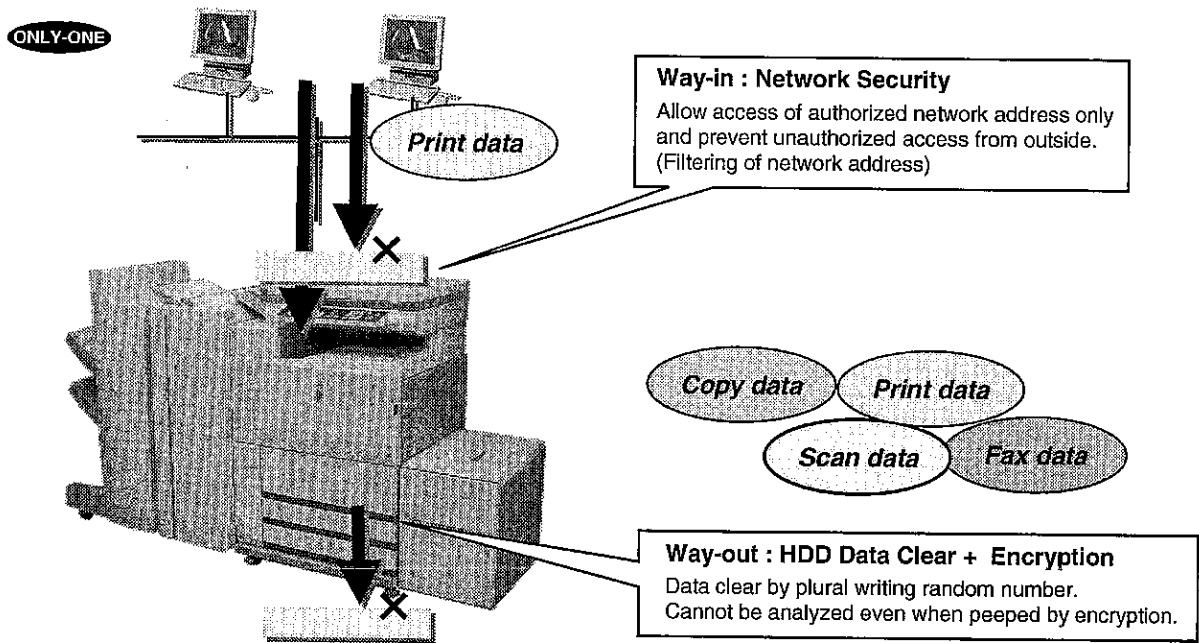
B. Network tandem

With Network tandem function, users can output one job on two network connected engines. Productivity of large-volume copying/printing can be dramatically improved by high-speed output of up to 110cpm (55cpm model), 124cpm (62cpm model) and 140cpm (70cpm model)

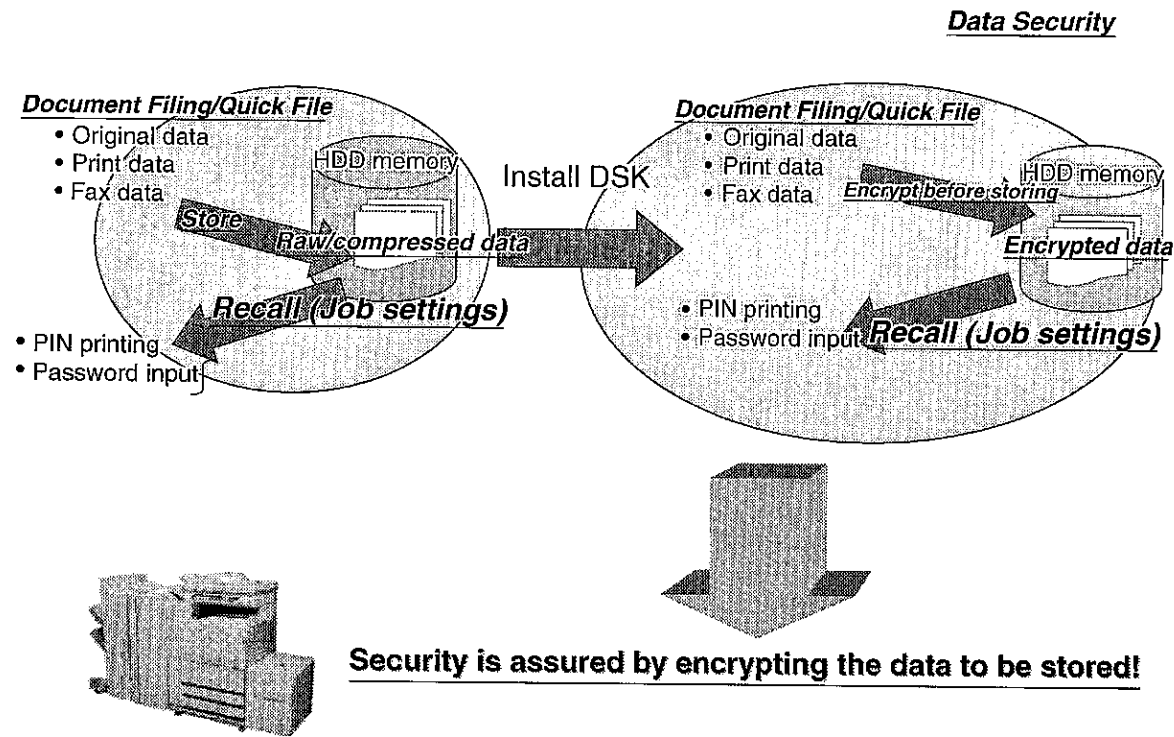


NOTE: Users can use the function simply by connecting the engines to network. This means no Tandem Kit (Connection cable) necessary.
For N model, only optional Printer Expansion Kit is required.

C. 2-Way Security Solution

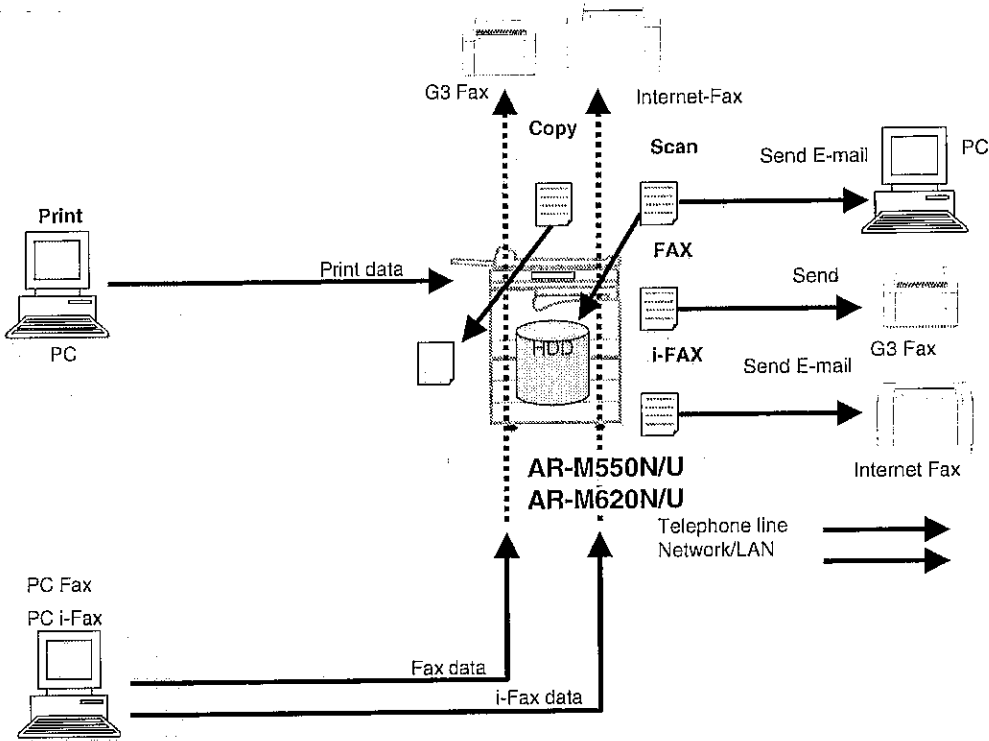


(1) Data Security coexisting with Document Filing



D. Document Filing

Document filing is a function that enables users to share and reuse data stored in the engine's HDD by digitalizing various information sent/scanned from printer, fax, PC or MFP that are connected by network.

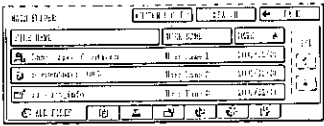


PC-Fax is like printing Word data etc. onto fax paper.

<Document Filing initial screen>



<List of data stored in Main folder>

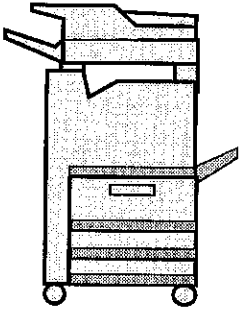


[2] CONFIGURATION

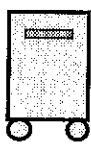
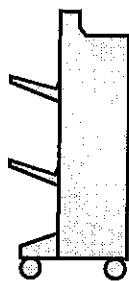
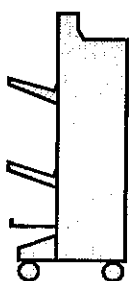




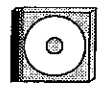







1. Main unit and option lineup

(1) Main unit lineup

| Model name | Composition |
|----------------------|-----------------------|
| AR-M550U/M620U/M700U | Copier model |
| AR-M550N/M620N/M700N | Network printer model |



(2) Option lineup

| | | |
|--|---|--|
|  |  |  |
| AR-LC6/Large capacity tray | AR-F15/Finisher | AR-F16/Saddle stitch finisher |
|  |  | <div>   </div> <div> (Boot/PCL, PS) SOFT KEY </div> |
| AR-CF2/Inserter | AR-PN2A/B/C/D / Punch unit | AR-P19/Printer expansion kit |
|  <div>SOFT KEY</div> |   | <div>   </div> <div> (Boot/PCL, PS) SOFT KEY </div> |
| AR-PK5/PS3 expansion kit | AR-PF1/Barcode font kit | AR-FR11/Data security kit |
|  <div>SOFT KEY</div> |  <div>Up to country</div> |  |
| AR-NS3/Network scanner expansion kit | AR-FX8/ Facsimile expansion kit*1 | AR-MM9/FAX expansion memory(8MB)*1 |
| AR-U11M/Sharpdesk 1 license kit AR-U15, AR-U15M/ Sharp desk 5 license kit AR-U1AM/Sharpdesk 50 license kit AR-U1BM/Sharp desk 100 license kit | | |

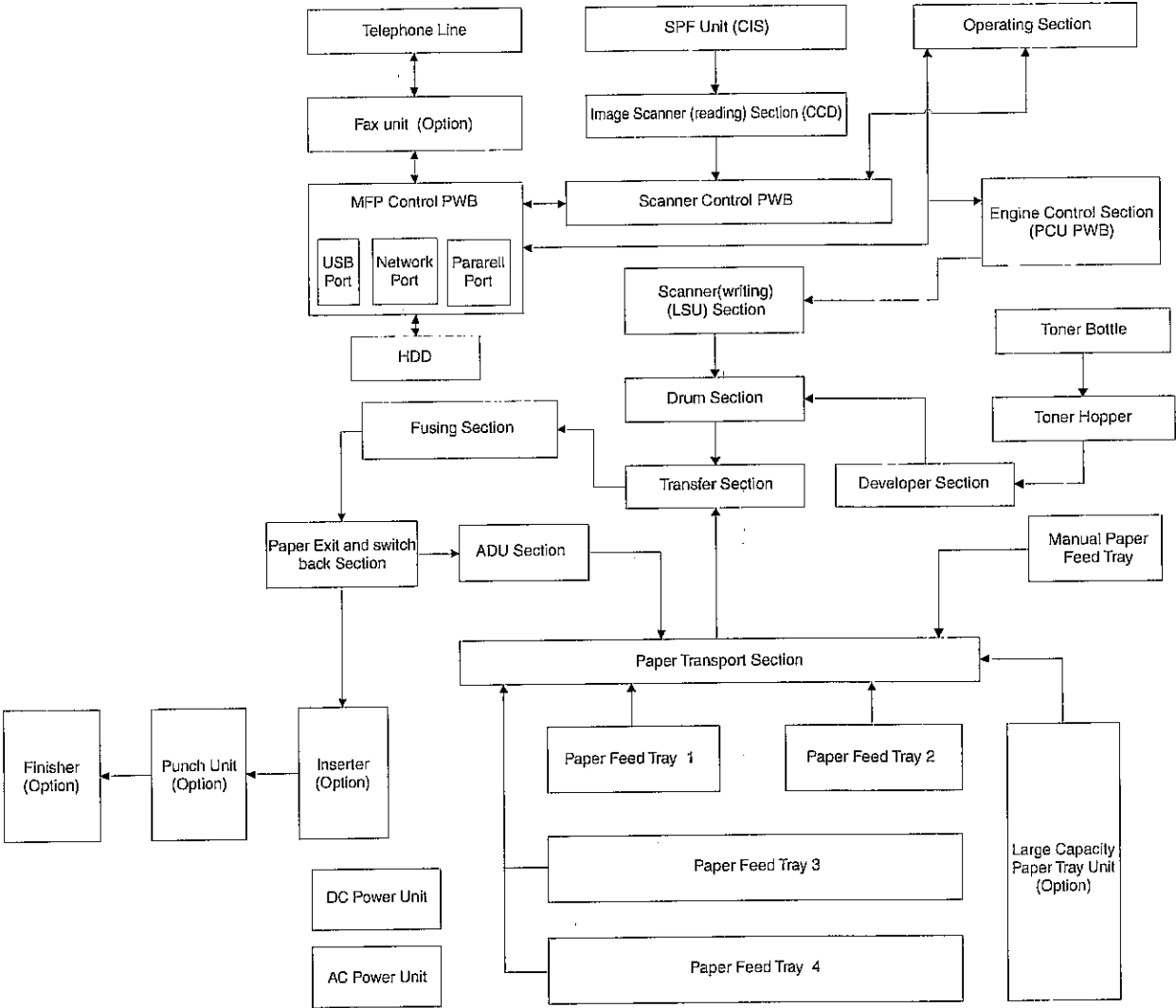
▲ *1: North America, Europe, Australia, New Zealand, Singapore, Taiwan

(3) Option combinations

STD:Standard provision, ○:Installable, x:Not installable

| Section | Option | Machine model | | Remarks |
|---|--|--|---|---|
| | | Copier model AR-M550U/ M620U/M700U | Network printer AR-M550N/ M620N/M700N | |
| Paper feed system | Large capacity tray (AR-LC6) | ○ | ○ | |
| Paper exit system | Finisher (AR-F15) | ○ | ○ | |
| | Saddle stitch finisher (AR-F16) | ○ | ○ | |
| | Inserter (AR-CF2) | ○ | ○ | |
| | Punch unit (AR-PN4A/4B/4C/4D) | ○ | ○ | For finisher and saddle stitch finisher |
| Electrical system (Printer controller) | Printer expansion kit (AR-P19) | ○ | STD | |
| | PS3 expansion kit (AR-PK5) | ○ | ○ | For installation to the AR-M550U/M620U/M700U, the printer expansion kit, AR-P19, is required. |
| | Barcode font kit (AR-PF1) | ○ | ○ | |
| Software | Data security kit (Not acknowledged version) (AR-FR11) | ○ | ○ | |
| | Network scanner expansion kit (AR-NS3) | ○ | ○ | |
| | Sharp desk 1 license kit (AR-U11M) | ○ | ○ | |
| | Sharp desk 5 license kit (AR-U15M) | ○ | ○ | |
| | Sharpdesk 50 license kit (AR-U1AM) | ○ | ○ | |
| | Sharpdesk 100 license kit (AR-U1BM) | ○ | ○ | |
| | FAX expansion memory (8MB) (AR-MM9) | ○ | ○ | |
| FAX system | Facsimile expansion kit (AR-FX8) | ○ | ○ | |
| | FAX expansion memory (8MB) (AR-MM9) | ○ | ○ | |

2. Block diagram



[3] SPECIFICATIONS

1. Basic specifications

A. Main unit

(1) Type

| | |
|----------------|---|
| Type | Console |
| Clip tray | Provided |
| Operation mode | Format |
| Copy mode | Monochrome digital (Electronic photo graphic) |

(2) Target users

| Mode | Model | Volume of usage | |
|-----------|--------------------|---------------------|-----------------------|
| Copy mode | AR-M550N/ M550U | Scope | ~ 250,000 pages/month |
| | | Average copy volume | ~ 40,000 pages/month |
| | AR-M620N/ M620U | Scope | ~ 300,000 pages/month |
| | | Average copy volume | ~ 40,000 pages/month |
| | AR-M700N/ M700U | Scope | ~ 300,000 pages/month |
| | | Average copy volume | ~ 50,000 pages/month |

(3) Engine speed

| Paper size | AR-M550N/ M550U | AR-M620N/ M620U | AR-M700N/ M700U |
|----------------------------|--|--------------------|--------------------|
| A4, 8.5x11 | 55ppm | 62ppm | 70ppm |
| A4R, 8.5x11R | 40ppm | 45ppm | 48ppm |
| A5R/5.5x8.5R, Invoice-R | 40ppm | 45ppm | 48ppm |
| B5 | 55ppm | 62ppm | 70ppm |
| B5R, Executive-R | 40ppm | 45ppm | 48ppm |
| B4/8.5x14 | 35ppm | 39ppm | 45ppm |
| A3/11x17 | 30ppm | 34ppm | 39ppm |
| Extra | 30ppm | 34ppm | 39ppm |
| Postcard | Since the next paper is fed after completion of paper exit outside the machine, it depends on the machine composition. | | |

(4) External dimensions (W x D x H)

| | |
|--|--|
| Packaged | — |
| Main unit | 728 x 679 x 1050mm (Height: Floor -- Glass surface) 728 x 679 x 1192mm (Height: Floor -- SPF top) |
| When an option is installed (Machine occupying area) | |
| Main unit + LCC installed | 1347 x 679 x 1192mm |
| Main unit + Saddle finisher/ Saddle finisher installed | 1794 x 679 x 1192mm |
| Main unit + LCC + Finisher/ Saddle finisher installed | 1887 x 679 x 1192mm |
| Main unit + Inserter + Finisher/ Saddle finisher | 2079 x 679 x 1192mm |
| Main unit + LCC + Inserter + Finisher/ Saddle finisher installed | 2156 x 679 x 1192mm |

(5) Weight

| | | |
|----------------------|-----------|--------------|
| AR-M550N/M620N/M700N | Packaged | About 212 Kg |
| | Main unit | 185 Kg |
| AR-M550U/M620U/M700U | Packaged | About 214 Kg |
| | Main unit | 185 Kg |

(6) Languages supported

| | |
|----------------------------|--|
| Key sheet language support | Japanese, English (America English/UK English), German, French, Spanish, Italian, Dutch, Swedish, Norwegian, Finnish, Danish, Czech, Polish, Hungarian, Greek, Chinese |
|----------------------------|--|

(7) Internal auditor

| | |
|--------------------|----------------------|
| System | Key operation system |
| No. of departments | 500 |

(8) Operation panel

| | | |
|---------------------------|-----------------------------------|---|
| Type | Dot matrix LCD (640 x 240dots) | |
| Operating procedure | Touch-panel input | |
| LCD drive display area | 153.5 x 57.5mm | |
| LCD backlight | Fluorescent lamp backlight system | |
| LCD brightness adjustment | Provided | |
| Character used in LCD | Type | Sharp/Fujitsu font |
| | Dot | Kanji: 16 x 16dots, Alphabet and numeral: 8 x 16dots, 16 x 16dots |
| | Bold text display | ○ (Mixed used in a same area or a same sentence is inhibited.) |

(9) Controller board

| | |
|-----------------------|---|
| CPU | RM7065 (64bit RISC CPU, 525 MHz) |
| Interface | |
| IEEE1284 Parallel | 1 port (* For printer/servicing) |
| Ethernet | 1 port* |
| USB2.0 | 1 port (* For printer/servicing) |
| Expansion port | PCI slot 1 slot |
| Memory | 128MB (onboard) |
| Memory expansion slot | 1 slot (168pin SDRAM DIMM compatible) 64MB/128MB/256MB expandable |

▲ *: Standard for the AR-M550N/M620N/M700N. The Printer expansion kit AR-P19 is required for the AR-M550U/M620U/M700U.

(10) Hard disk

| | |
|----------------------------|--------------|
| Hard disk capacity | 40GB |
| Hard disk storage quantity | 60000 sheets |

(11) Power source

a. Dehumidifier functionality (Option)

| | |
|---------|--|
| Section | Paper conveyor section/Scanner section |
|---------|--|

b. Operating voltage/power consumption

| Power supply voltage/frequency | | Power consumption With full options Max. |
|--------------------------------|---------|--|
| 100V (Japan) | 50/60Hz | 1450 |
| Other countries in 100V system | 50/60Hz | 1800 |
| Other countries in 200V system | 50/60Hz | 1840 |

2. Engine specifications

A. Paper feeding, paper conveyance, and discharge section

(1) Paper feeding performance

| | | |
|-------------------------|---|----------|
| Type | 4-stage paper feed tray (Parallel LCC + 2 tray + Multi manual paper feed) | |
| Paper feed method | Paper is fed from the above by the front loading system. | |
| Dehumidification heater | Japan | Standard |
| | Except for Japan | Option |

• Tray 1 (Left tray in the parallel LCC)

| Paper size (set by software) | Paper size change method | Paper type setting | Paper size setting when shipping | Allowable paper type and weight for paper feed | Paper capacity (Standard paper) | Paper type | Paper remaining detection | Tray lift time | |
|------------------------------|--------------------------|--------------------|---|---|---|---|----------------------------------|----------------|------------------------------|
| A4, 8.5" x 11" | Size setting by user | YES | Japan: A4 Inch Series: 8.5" x 11" AB Series: A4 (16K is not supported.) | Normal paper: 60 – 105g/m ² (16 – 28lbs) | Japan: 900 sheets (64g/m ²) Except for Japan: 800 sheets (80g/m ²) | Normal paper, printed paper, recycled, letterhead, punched paper, color paper | Enable (Paper empty and 3 steps) | Up Down | Within 12sec *1 Free fall |

*1: Time required from tray insertion to empty detection when paper is empty.

• Tray 2 (Right tray in the parallel LCC)

| Paper size (set by software) | Paper size change method | Paper type setting | Paper size setting when shipping | Allowable paper type and weight for paper feed | Paper capacity (Standard paper) | Paper type | Paper remaining detection | Tray lift time | |
|--|---|--------------------|---|---|---|---|----------------------------------|----------------|------------------------------|
| Japan: A4, B5, 8.5" x 11" AB series (Europe, SCA): A4, 8.5" x 11" AB series (Other): A4, B5, 8.5" x 11" Inch Series: 8.5" x 11", A4 | Size setting by serviceman (B5 available through bolt fixing and setting by serviceman) | YES | Japan: B5 Inch Series: 8.5" x 11" AB Series: A4 (16K is not supported.) | Normal paper: 60 – 105g/m ² (16 – 28lbs) | Japan: 1300 sheets (64g/m ²) Except for Japan: 1200 sheets (80g/m ²) | Normal paper, printed paper, recycled, letterhead, punched paper, color paper | Enable (Paper empty and 3 steps) | Up Down | Within 12sec *1 Free fall |

*1: Time required from tray insertion to empty detection when paper is empty.

• Tray 3 (Multi-purpose tray)

| Paper size | Paper size change method | Paper type setting | Paper size setting when shipping | Allowable paper type and weight for paper feed | Paper capacity (Standard paper) | | Paper type | Document detection | | Paper remaining detection |
|---|--------------------------|--------------------|--|---|---------------------------------|---|---|--|--|----------------------------------|
| A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR 11 x 17, 8.5 x 14, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R, 5.5 x 8.5R, Special size (Tab paper is of A4; limited to tab width 12mm – 20mm/8.5 x 11; tab width 6.1mm – 17mm.) | Guide adjustment by user | YES | Shipped with the paper guide width at Max. | Normal paper: 60 – 105g/m ² (16 – 28 lbs) Thick paper: 106 – 128g/m ² (29 – 34 lbs) 205g/m ² (110 lbs) 176g/m ² (65 lbs) OHP, label sheet, tab paper *1, *2 | Standard paper | Japan: 550 sheets (64g/m ²) Except for Japan: 500 sheets (80g/m ²) | Normal paper, printed paper, recycled, letterhead, punched paper, color paper, thick paper, label sheet, OHP, tab paper | Automatic detection Auto-AB | A3, B4, A4, A4R, B5, B5R, 8.5 x 13 | Enable (Paper empty and 3 steps) |
| | | | | | OHP | 40 sheets | | Automatic detection Auto-inch | 11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R | |
| | | | | | Tab paper | Enable | | For 8K, 16K, and 16KR, setting is made manually. | | |
| | | | | | | | | Detection disregard setting | Enable | |

*1: For 105g/m² or above, A4/8.5 x 11 or less. For 128g/m² or above, horizontal feed only.

*2: For multi copy and back surface copy, single feed only.

• Tray 4 (500-sheet paper feed tray)

| Paper size | Paper size change method | Paper type setting | Paper size setting when shipping | Allowable paper type and weight for paper feed | Paper capacity (Standard paper) | Paper type | Document detection | | Paper remaining detection |
|---|--------------------------|--------------------|--|---|---|--|--|--|----------------------------------|
| A3, B4, A4, A4R, B5, B5R, 8K, 16K, 16KR 11 x 17, 8.5 x 14, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R | Guide adjustment by user | YES | Shipped with the paper guide width at Max. | Normal paper: 60 – 105g/m ² (16 – 28 lbs) *1, *2 Thick paper: 106 – 128g/m ² (29 – 34 lbs) 205g/m ² (110 lbs) 176g/m ² (65 lbs) | Japan: 550 sheets (64g/m ²) Except for Japan: 500 sheets (80g/m ²) | Normal paper, printed paper, recycled, letterhead, punched paper, color paper, thick paper | Automatic detection Auto-AB | A3, B4, A4, A4R, B5, B5R, 8.5x13 | Enable (Paper empty and 3 steps) |
| | | | | | | | Automatic detection Auto-inch | 11 x 17, 8.5 x 14, 8.5 x 11, 8.5 x 11R, 7.25 x 10.5R | |
| | | | | | | | For 8K, 16K, and 16KR, setting is made manually. | | |

*1: For 105g/m² or above, A4/8.5 x 11 or less. For 128g/m² or above, horizontal feed only.

*2: For multi copy and back surface copy, single feed only.

• Manual paper feed

| Paper size | Paper type setting | Allowable paper type and weight for paper feed | Paper capacity (Standard paper) | Paper type | Document detection | Paper empty detection |
|--|--------------------|---|--|--|---|-----------------------|
| A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR, Postcard 11x17, 8.5x14, 8.5x13, 8.5x11, 8.5x11R, 7.25x10.5R, 5.5x8.5R | YES | Thin paper: 52 – 59g/m ² (14 – 15lbs) (Tab paper in single feed) Normal paper: 60 – 105g/m ² (16 – 28 lbs) Thick paper: 106 – 128g/m ² (29 – 34 lbs), 176g/m ² (65 lbs) cover 205g/m ² (110 lbs) Index OHP, postcard, label sheet, tab paper*1, *2 | Plain paper: 100 sheets (80g/m ²) Postcard: 20 sheets OHP: 20 sheets | Normal paper, recycled paper, printed paper, punched paper, color paper, letterhead, back paper, label paper, thick paper, OHP, tab paper (tab width 20mm or less) | Automatic detection Auto-AB Automatic detection Auto-inch Detection of 8K and 16K in the manual paper feed tray is not performed. | YES |

*1: For paper exceeding 105g/m², A4/8.5 x 11 or smaller. For paper exceeding 128g/m², horizontal feed only.

*2: Multi-back surface copy is enable only in single feed.

• Duplex

| System | Non stack system |
|--|---|
| Paper size | A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR, 11 x 17, 8.5 x 14, 8.5 x 13, 8.5 x 11, 8.5 x 11R, 8.5 x 5.5R |
| Type and weight of paper which can be passed | Plain paper: 60 – 105g/m ² (16 – 28lbs) Thick paper: 106 – 128g/m ² (29 – 34 lbs), 176g/m ² (65 lbs cover) 205g/m ² (110 lbs) Index |

(2) Finishing performance

| | |
|---------------------------------|--|
| Paper exit position / system | Main unit top surface face-down paper exit |
| Paper exit capacity | 250 sheets (80g/m ² paper) |
| Paper exit paper size/ kind | All kinds of paper which can be fed |
| Remaining paper detection | None |
| Paper exit paper full detection | Provided |

B. Scanner section (read)

(1) Type

| | |
|---|--------------------------|
| Document table mode / SPF (front side) mode | |
| Scanning method | By the CCD image sensor. |

| | |
|----------------------|-------------------------|
| SPF (back side) mode | |
| Scanning method | By the CIS image sensor |

(2) Original standard position, scanning size, and scanning area

a. Original standard position

| | |
|----------------|-----------------------|
| Document table | Left bottom reference |
| SPF | Center reference |

b. Scanning size

| | | |
|--------------------|-------------|---------|
| Max. original size | AB Series | A3 |
| | Inch Series | 11 x 17 |

(3) Resolution

| Scan resolution (dpi) | Copy mode | | | | |
|-----------------------|---------------------------------|-----------|--------------|-----------------|-----------------|
| | Platen | | | | |
| | Magnification ratio | 25 – 99 | Normal ratio | 101 – 171 | 172 – 400 |
| | | 600 x 600 | 600 x 600 | 600 x 600 | 600 x (600 x 2) |
| | SPF | | | | |
| | Magnification ratio | 25 – 99 | Normal ratio | 101 – 117 | 118 – 200 |
| | When in single copy | 600 x 367 | 600 x 367 | 600 x 367 | 600 x 600 |
| | When in duplex copy (front) CCD | 600 x 600 | 600 x 600 | 600 x (600 x 2) | 600 x (600 x 2) |
| | When in duplex copy (back) CIS | 600 x 300 | 600 x 300 | 600 x 600 | 600 x 600 |

| Input and send resolution (dpi) | When in the Fax send mode and the scanner FAX broadcast mode | | | | | |
|---------------------------------|--|--------------|---------------|-----------------|-----------------|---------------|
| | Select mode | Standard | Fine text | Super fine text | Ultra fine text | 600dpi send * |
| | Input resolution: OC | 600 x 600 | 600 x 600 | 600 x 600 | 600 x 600 | 600 x 600 |
| | Input resolution: SPF simplex | 600 x 367 | 600 x 367 | 600 x 367 | 600 x 367 | 600 x 367 |
| | Input resolution: SPF simplex (front) CCD | 600 x 600 | 600 x 600 | 600 x 600 | 600 x 600 | 600 x 600 |
| | Input resolution: SPF duplex (back) CIS | 600 x 300 | 600 x 300 | 600 x 300 | 600 x 300 | 600 x 300 |
| | Communication resolution | FAX | | | | |
| | | 203.2 x 97.8 | 203.2 x 195.6 | 203.2 x 391 | 406.4 x 391 | – |
| | | Internet FAX | | | | |
| | | 200 x 100 | 200 x 200 | 200 x 400 | 400 x 400 | 600 x 600 |

* Except for FAX sending

| Input and send resolution (dpi) | Scanner mode | | | | |
|---------------------------------|--|-----------|-----------|-----------|-----------|
| | Select mode | 200 x 200 | 300 x 300 | 400 x 400 | 600 x 600 |
| | Input resolution: OC | 600 x 600 | 600 x 600 | 600 x 600 | 600 x 600 |
| | Input resolution: SPF simplex | 600 x 367 | 600 x 367 | 600 x 367 | 600 x 367 |
| | Input resolution: SPF duplex (front) CCD | 600 x 600 | 600 x 600 | 600 x 600 | 600 x 600 |
| | Input resolution: SPF duplex (back) CIS | 600 x 300 | 600 x 300 | 600 x 300 | 600 x 300 |
| | Communication resolution | 200 x 200 | 300 x 300 | 400 x 400 | 600 x 600 |

(4) Gradation

| Input | Output |
|-----------------------|---------------------|
| 256 gradations (8bit) | 2 gradations (1bit) |

(5) Scanning speed

| Scans per minute | |
|------------------|--|
| DSPF | 65 surfaces (single) 76 surfaces (duplex) |

(6) Light source

| | |
|------|---|
| Type | None-electrode xenon lamp (Front), LED (Back) |
|------|---|

(7) Scanning sensor

| | |
|------|----------------|
| Type | Monochrome CCD |
|------|----------------|

C. Scanner section (write)

(1) Type

| | |
|-------------|----------------|
| Scan system | Laser scanning |
|-------------|----------------|

(2) Laser unit specifications

| | |
|---------------------------------|--|
| Rotation speed | 34000 rpm (AR-M550N/U, AR-M620N/U) 40000 rpm (AR-M700N/U) |
| Mirror surfaces | 14 surfaces |
| Laser power | 0.385±0.04 mW (AR-M550N/U, AR-M620N/U) 0.480±0.04 mW (AR-M700N/U) |
| Laser beam size | Main scan: 60 – 85 mm, sub scan: 75 – 110 mm |
| Laser wavelength | 770 – 795 nm |
| Scan width (sub scan direction) | AB series: 420 mm Inch series: 432mm |

(3) Resolution

| | |
|-------------------------|------------------------|
| Main scanning direction | Sub scanning direction |
| 600dpi | 600dpi |

(4) Gradation

| |
|---------------------|
| 2 gradations (1bit) |
|---------------------|

D. Image processing section

(1) Imaging speed

| |
|-------------------------------------|
| 335 mm/sec (AR-M550N/U, AR-M620N/U) |
| 395 mm/sec (AR-M700N/U) |

(2) Photosensitive drum

| | |
|------|-----------------------------|
| Type | OPC φ80mm |
| Life | 55ppm: 250K, 62/70ppm: 300K |

E. Fuser section

(1) Type

| | |
|--------|-------------------------------|
| System | Heat roller attachment system |
|--------|-------------------------------|

(2) Fuser temperature

(Unit: °C)

| Mode | | | Control temperature | | | |
|-----------------|---|-----------------|-----------------------------|---|-----------------------------|---|
| | | | Fusing roller | | Auxiliary heat roller | |
| | | | Inch (U.S.A., Canada) | AB_B (Europe, U.K.) AB_A (Australia) | Inch (U.S.A., Canada) | AB_B (Europe, U.K.) AB_A (Australia) |
| Copy/Print mode | Normal mode control temperature | Heat roller | 200 | 205 | 200 | 205 |
| | Normal mode control temperature | Sub heat roller | 200 | 205 | 200 | 205 |
| | Thick paper mode control temperature | Heat roller | 200 | 205 | 200 | 205 |
| | Thick paper mode control temperature | Sub heat roller | 200 | 205 | 200 | 205 |
| Pre-heat mode | Energy saving mode control temperature | Heat roller | 170 | 170 | 170 | 170 |
| | Control temperature in the energy save mode | Sub heat roller | 170 | 170 | 170 | 170 |

(4) Heat roller

| | |
|------|--------------|
| Type | Teflon lined |
| Life | 300K |

(5) Pressure roller

| | |
|------|------------------------|
| Type | Silicone rubber roller |
| Life | 300K |

(6) Method

| |
|----------------------------------|
| Forced release by releasing tabs |
|----------------------------------|

(3) Toner

| | |
|----------|---|
| Capacity | 1430/1650g (Other countries), 1275g (Japan) |
|----------|---|

(4) Developer

| | |
|----------|-----------------------------|
| Capacity | 725g x 2 (2 bags are used.) |
| Life | 55ppm: 250K, 62/70ppm: 300K |

(5) Charging

| | |
|---------|----------|
| Type | Corotron |
| Voltage | –590V±2V |

(6) Exposure

| | |
|--------|---------------------------|
| System | Exposure from laser diode |
|--------|---------------------------|

(7) Developing system

| | |
|---------|---|
| System | Dry, 2-component magnetic brush development |
| Voltage | –500V±5V (Developing mode) +150V (Cleaning mode) |

(8) Transfer

| | |
|------------------|--|
| System | Static electricity transfer (transfer belt method) |
| Transfer section | 35μA (AR-M550N/U, AR-M620N/U) 40μA (AR-M700N/U) Cleaning mode (AC 4.5kV, DC –100V) |

(9) Paper separation system

| | |
|--------|--|
| System | Curvature separation + Separation pawl |
|--------|--|

(10) Discharging

| | |
|--------|-------------------------|
| System | Discharging lamp method |
|--------|-------------------------|

(11) Cleaning

| | |
|--------|----------------------|
| System | Counter blade system |
|--------|----------------------|

(12) Waste toner collector capacity

| | |
|----------|-----------------------|
| Capacity | 40% of toner capacity |
|----------|-----------------------|

F. Drive section

| Drive section | Motor name | Motor type |
|---------------------------|------------------|---------------------|
| Image scanner | Scanner motor | Stepping motor |
| Developing system | Developing motor | DC brush-less motor |
| Paper feed and conveyance | Paper feed motor | DC brush-less motor |
| Transfer, OPC drum | OPC drum motor | DC brush-less motor |
| Fusing | Fusing motor | DC brush-less motor |

3. Operating specifications

A. Common operations

(1) Warm-up, jam recovery time, low power mode, sleep mode

a. Warm-up time (ambient temp. of 20°C)

| | |
|------------------------------|-------------------|
| After turned on | Max. 120 seconds |
| Reset time from preheat mode | Within 30 seconds |

b. Jam recovery time

| | |
|-------------------|---|
| Jam recovery time | Within approx. 30 sec (Condition: door open/ fusing unit pull-out, after leaving for 60sec, standard condition, polygon stop) |
| | Under 30 seconds (conditions: door open) |

c. Low power mode, sleep mode

| | | AR-M550N/U | AR-M620N/U | AR-M700N/U |
|-------------------------------------|-------------|-----------------------|------------|------------|
| Low power consumption mode | S/U model*1 | 216.75W | 243.7W | 274.5W |
| | M/N model*2 | 261.75W | 288.7W | 319.5W |
| Reset time from low power mode | | 30sec | | |
| Power consumption in the sleep mode | S/U model*1 | 20W or less | | |
| | M/N model*2 | 95W or less | | |
| Shift time to sleep mode | | 90 min (Max. 240 min) | | |

*1: Calculation formula: $3.85 \times \text{ipm} + 5W$

*2: Calculation formula: $3.85 \times \text{ipm} + 50W$

(ipm: input page per minute)

(2) Size sensing summary

Yes: detection; yes

USER: by USER setting

USER 1: USER SETTING 1 (INCH series)

USER 2: USER SETTING 2 (AB series)

SVC: By serviceman setting

No: detection; no (engine performs as extra mode)

N/A: Not applicable

PRT Key OP: by printer key operator program

T/C: Simulation setting(by Serviceman)

The size detection- off mode will be added in printer key operator program. Refer to Front panel spec.

| Destination | All Destinations | | | | | | | | | | |
|-----------------|-------------------------------|--------------------------------|--------------------------|--------|-----------------------|--------|----------|-------------------|--------|---------------|--------|
| Paper size | Tray 1 tandem tray left | Tray 2 tandem tray right | Tray 3 Universal tray | | Tray 4 Drawer Tray | | LCC desk | Multi bypass tray | | Inserter tray | |
| | | | USER 1 | USER 2 | USER 1 | USER 2 | | USER 1 | USER 2 | USER 1 | USER 2 |
| A6-R | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 5.5 x 8.5 in.-R | N/A | N/A | Yes *2 | N/A | N/A | N/A | N/A | Yes *2 | N/A | Yes | USER |
| A5-R | N/A | N/A | N/A | Yes *2 | N/A | N/A | N/A | N/A | Yes *2 | USER | Yes |
| B5 | N/A | SVC | N/A | Yes *2 | N/A | Yes | N/A | N/A | Yes *2 | USER | Yes |
| B5R | N/A | N/A | N/A | Yes *2 | N/A | Yes | N/A | N/A | Yes *2 | USER | Yes |
| Executive-R | N/A | N/A | Yes *2 | N/A | Yes | N/A | N/A | Yes *2 | N/A | Yes | USER |
| Letter | USER | SVC | Yes | N/A | Yes | N/A | SVC | Yes | N/A | Yes | USER |
| Letter-R | N/A | N/A | Yes *2 | N/A | Yes | N/A | N/A | Yes | N/A | Yes | USER |
| A4 | USER | SVC | N/A | Yes | N/A | Yes | SVC | N/A | Yes | USER | Yes |
| A4-R | N/A | N/A | N/A | Yes *2 | N/A | Yes | N/A | N/A | Yes | USER | Yes |
| Legal | N/A | N/A | Yes *3 | N/A | Yes *2 | N/A | N/A | Yes *3 | N/A | Yes | USER |
| Foolscap | N/A | N/A | N/A | Yes *3 | N/A | Yes *2 | N/A | N/A | Yes *3 | USER | Yes |
| B4 | N/A | N/A | N/A | Yes *3 | N/A | Yes *2 | N/A | N/A | Yes *3 | USER | Yes |
| A3 | N/A | N/A | N/A | Yes *3 | N/A | Yes *2 | N/A | N/A | Yes *3 | USER | Yes |
| 11 x 17 in | N/A | N/A | Yes *3 | N/A | Yes *2 | N/A | N/A | Yes *3 | N/A | Yes | USER |
| Postcard | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | Yes | N/A | N/A |
| Custom | | | | | | | | | | | |
| 148-181mm | N/A | N/A | USER | USER | N/A | N/A | N/A | USER | USER | N/A | N/A |
| 182-432mm | N/A | N/A | USER | USER | N/A | N/A | N/A | USER | USER | N/A | N/A |
| 8K *1 | N/A | N/A | USER | USER | USER | USER | N/A | USER | USER | USER | USER |
| 16K *1 | N/A | N/A | USER | USER | USER | USER | N/A | USER | USER | USER | USER |
| 16K-R *1 | N/A | N/A | USER | USER | USER | USER | N/A | USER | USER | USER | USER |

*1: China destination only

*2: Except Tab Paper type

*3: Except Heavy/Label/Transparency/Tab paper type

(3) Paper type summary

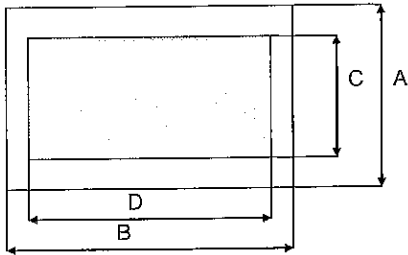
Yes: This function is effective

No: This function is invalid

USER: by USER setting

| Paper Type | Print job | Copy job | Fax job | i-Fax job | Filing job | F-R attribute | Duplex disable | Staple disable | Punch disable |
|----------------|-----------|----------|---------|-----------|------------|---------------|----------------|----------------|---------------|
| Standard paper | USER | USER | USER | USER | USER | NO | NO | NO | NO |
| Recycled paper | USER | USER | USER | USER | USER | NO | NO | NO | NO |
| Color paper | USER | USER | USER | USER | USER | NO | NO | NO | NO |
| Printed paper | USER | USER | USER | USER | USER | YES | NO | NO | NO |
| Letterhead | USER | USER | USER | USER | USER | YES | NO | NO | NO |
| Thick paper | USER | USER | USER | USER | USER | NO | NO | YES | NO |
| Punched paper | USER | USER | USER | USER | USER | NO | NO | NO | NO |
| Label sheet | USER | USER | USER | USER | USER | NO | YES | YES | YES |
| OHP | USER | USER | USER | USER | USER | NO | YES | YES | YES |
| Tab paper | USER | USER | USER | USER | USER | NO | YES | NO | NO |
| User Type | USER | USER | USER | USER | USER | USER | USER | USER | USER |

(4) Effective print area



| Paper size | A | | B | | C | D | E | F | G | H |
|-------------|-------------|--------|-------------|--------|--------|-----------|-----------|-----------|-----------|-----------|
| | (mm/inch) | (dots) | (mm/inch) | (dots) | (dots) | (dots) | (dots) | (dots) | (dots) | (dots) |
| Ledger | 11.0 (inch) | 6600 | 17.0 (inch) | 10200 | 6400 | 10000 | 100 | 100 | 100 | 100 |
| Legal | 8.5 (inch) | 5100 | 14.0 (inch) | 8400 | 4900 | 8200 | 100 | 100 | 100 | 100 |
| Foolscap | 8.5 (inch) | 5100 | 13.0 (inch) | 7800 | 4900 | 7600 | 100 | 100 | 100 | 100 |
| Letter | 11.0 (inch) | 6600 | 8.5 (inch) | 5100 | 6400 | 4900 | 100 | 100 | 100 | 100 |
| Letter-R | 8.5 (inch) | 5100 | 11.0 (inch) | 6600 | 4900 | 6400 | 100 | 100 | 100 | 100 |
| Executive-R | 7.25 (inch) | 4350 | 10.5 (inch) | 6300 | 4150 | 6100 | 100 | 100 | 100 | 100 |
| Invoice-R | 5.5 (inch) | 3300 | 8.5 (inch) | 5100 | 3100 | 4900 | 100 | 100 | 100 | 100 |
| A3 | 297 (mm) | 7015 | 420 (mm) | 9921 | 6815 | 9721 | 100 | 100 | 100 | 100 |
| B4 | 257 (mm) | 6070 | 364 (mm) | 8598 | 5870 | 8398 | 100 | 100 | 100 | 100 |
| A4 | 297 (mm) | 7015 | 210 (mm) | 4960 | 6815 | 4760 | 100 | 100 | 100 | 100 |
| A4R | 210 (mm) | 4960 | 297 (mm) | 7015 | 4760 | 6815 | 100 | 100 | 100 | 100 |
| B5 | 257 (mm) | 6070 | 182 (mm) | 4299 | 5870 | 4099 | 100 | 100 | 100 | 100 |
| B5R | 182 (mm) | 4299 | 257 (mm) | 6070 | 4099 | 5870 | 100 | 100 | 100 | 100 |
| A5R | 148 (mm) | 3496 | 210 (mm) | 4960 | 3296 | 4760 | 100 | 100 | 100 | 100 |
| A6R | 105 (mm) | 2480 | 148 (mm) | 3496 | 2280 | 3296 | 100 | 100 | 100 | 100 |
| Postcard | 100 (mm) | 2362 | 148 (mm) | 3496 | 2162 | 3296 | 100 | 100 | 100 | 100 |
| -- | -- | -- | -- | -- | -- | reference | 4.23 (mm) | 4.23 (mm) | 4.23 (mm) | 4.23 (mm) |

NOTE: Engine can make void area by force. Because when real paper size is smaller than the detected size, engine can stop laser shot to prevent machine damage that causes from created drum image which is out of paper.

(5) Image rotation in staple mode

Staple mode by Finisher/Saddle stitch finisher need 180 degrees image rotation.

Because by mechanical reasons, paper edge which to be stapled cannot be changed.

| Finisher | Mode | Image rotation |
|---------------------------------|------------|----------------|
| Finisher/Saddle stitch finisher | Non-staple | 180°C |
| | Staple | 180°C |

B. Copy mode

(1) Document size

| Scan mode | Paper type | Location | Dimensions | | Paper size | | Paper size | Note |
|---------------------|--|----------|------------|---------------|------------|---|---|------|
| | | | Min. | Max. | Min. | Max. | | |
| Original stand mode | AB Series | AB-1 | — | 297 x 431.8mm | A5 | A3 | A3, B4, A4, A4R, B5, B5R, A5 | |
| | | AB-2 | — | | | | A3, A4, A4R, A5, B5, B5R, 216×330 | |
| | | AB-3 | — | | | | 8K, A4, AR4, A5, B4, 16K, 16KR | |
| | Inch Series | Inch-1 | — | 5.5 × 8.5 | 11 × 17 | 11×17, 8.5×14, 8.5×11, 8.5×11R, 5.5×8.5 | | |
| | | Inch-2 | — | | | 11×17, 8.5×13, 8.5×11, 8.5×11R, 5.5×8.5 | | |
| DSPF mode | AB Series | AB-1 | — | — | A5 | A3 | A3, B4, A4, A4R, B5, B5R, A5, 8.5×11R, 216×330 | |
| | | AB-2 | — | — | | | 8K, A4, A4R, B4, 16K, 16KR, A5, 8.5×11, 216×330 | |
| | Inch Series | Inch-1 | — | — | 8.5 × 5.5 | 11 × 17 | 11×17, 8.5×14, 8.5×11, 8.5×11R, 8.5×5.5, A4 | |
| | | Inch-2 | — | — | | | 11×17, 8.5×13, 8.5×11, 8.5×11R, 8.5×5.5, A4 | |
| | Mix paper feed (Same series, same width paper) enabled | | | | | | | |

(2) Paper size

| Paper type | Dimensions | | Paper size | | Paper size | Note |
|-------------|------------|------|-------------------|---------|--|------|
| | Min. | Max. | Min. | Max. | | |
| AB Series | — | — | A6 (A6R) Postcard | A3 | A3, B4, A4, A4R, B5, B5R, A5R, 8K, 16K, 16KR, Postcard | |
| Inch Series | — | — | 8.5 x 5.5 | 11 x 17 | 11x17, 8.5x14, 8.5x13, 8.5x11, 8.5x11R, 7.25x10.5R, 5.5x8.5R | |

(3) Exposure

a. Density/copy image quality process

| | |
|------------------------|---|
| Exposure speed | Binary: Text (Auto/Manual), Text/Photo, Photo |
| Number of manual steps | 9 steps |
| Toner save mode | YES |

b. Resolution

• Scanning

| Main scanning direction | Sub scanning direction |
|-------------------------|------------------------|
| Basic resolution | Basic resolution |
| 600dpi | 600dpi |

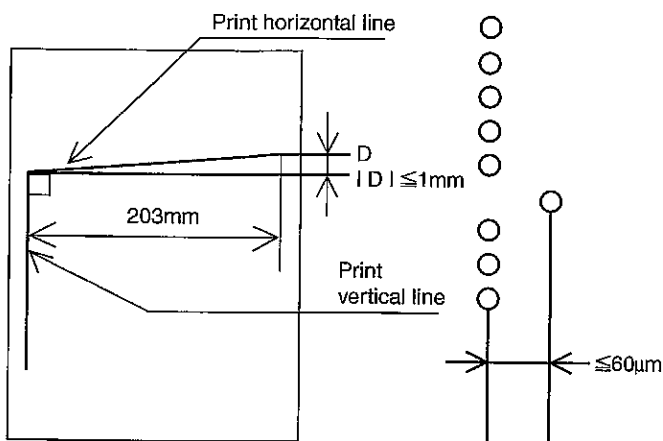
• Write

| Main scanning direction | Sub scanning direction |
|-------------------------|------------------------|
| Basic resolution | Basic resolution |
| 600dpi | 600dpi |

c. Gradation/image processing

| Scanning | Printing |
|-----------------------|---------------------|
| 256 gradations (8bit) | 2 gradations (1bit) |

d. Distortion



(4) Copy magnification

a. Copy magnification (independent magnification by direction is possible)

| Main scanning direction | | Sub scanning direction | |
|--|---|--|---|
| Mode | Magnification range/ fixed magnification | Mode | Magnification range/ fixed magnification |
| Zoom mode | 25 – 400(200)%* | Zoom mode | 25 – 400(200)%* |
| Fixed magnification mode (AB Series) | 25, 50, 70, 81, 86, 100, 115, 122, 141, 200, 400% | Fixed magnification mode (AB Series) | 25, 50, 70, 81, 86, 100, 115, 122, 141, 200, 400% |
| Fixed magnification mode (Inch Series) | 25, 50, 64, 77, 100, 121, 129, 141, 200, 400% | Fixed magnification mode (Inch Series) | 25, 50, 64, 77, 100, 121, 129, 141, 200, 400% |

* When copying from SPF: 25 – 200%

Preset copy magnification ratio: 4

b. Copy magnification precision

| Main scanning direction | | Sub scanning direction | |
|-------------------------|--------------------------|------------------------|--------------------------|
| Copy magnification | Magnification precision | Copy magnification | Magnification precision |
| Normal copy | 100% ± 0.8% | Normal copy | 100% ± 0.8% |
| Enlargement copy | Set magnification ± 1.0% | Enlargement copy | Set magnification ± 1.0% |
| Reduction copy | Set magnification ± 1.0% | Reduction copy | Set magnification ± 1.0% |

c. Zoom method

| Main scanning direction | Performed through image processing |
|-------------------------|---|
| Sub scanning direction | Performed by changing image processing and scanning speed |

(5) Job speed

a. First copy time

| | AR-M550N/ M550U | AR-620N/ M620U | AR-M700N/ M700U |
|----------------|-----------------|----------------|-----------------|
| Document table | Within 3.9sec | Within 3.9sec | Within 3.3sec |
| DSPF | Within 6.1sec | Within 6.1sec | Within 5.5sec |

* Measurement conditions: When paper of A4/8.5 x 11 is fed from the main unit tray, the polygon motor is rotating.

b. Copy speed

| Copy mode | Paper size | AR-M550N/M550U | | | AR-620N/M620U | | | AR-M700N/M700U | | |
|---------------------|-------------------------|--|--------------------|-------------------------|----------------------|--------------------|-------------------------|----------------------|--------------------|-------------------------|
| | | Copy magnification | | | Copy magnification | | | Copy magnification | | |
| | | Reduction copy (25%) | Normal copy (100%) | Enlargement copy (400%) | Reduction copy (25%) | Normal copy (100%) | Enlargement copy (400%) | Reduction copy (25%) | Normal copy (100%) | Enlargement copy (400%) |
| Original stand mode | A4, 8.5×11 | 55 | 55 | 55 | 62 | 62 | 62 | 70 | 70 | 70 |
| | A4R, 8.5×11R | 40 | 40 | 40 | 45 | 45 | 45 | 48 | 48 | 48 |
| | A5R/5.5×8.5R, Invoice-R | 40 | 40 | 40 | 45 | 45 | 45 | 48 | 48 | 48 |
| | B5 | 55 | 55 | 55 | 62 | 62 | 62 | 70 | 70 | 70 |
| | B5R, Executive-R | 40 | 40 | 40 | 45 | 45 | 45 | 48 | 48 | 48 |
| | B4/8.5×14 | 35 | 35 | 35 | 39 | 39 | 39 | 45 | 45 | 45 |
| | A3/11×17 | 30 | 30 | 30 | 34 | 34 | 34 | 39 | 39 | 39 |
| | Extra | 30 | 30 | 30 | 34 | 34 | 34 | 39 | 39 | 39 |
| | 8K | 35 | 35 | 35 | 39 | 39 | 39 | 45 | 45 | 45 |
| | 16K | 55 | 55 | 55 | 62 | 62 | 62 | 70 | 70 | 70 |
| | 16KR | 40 | 40 | 40 | 45 | 45 | 45 | 48 | 48 | 48 |
| | Postcard | Since the next paper is fed after completion of paper exit outside the machine, it depends on the machine composition. | | | | | | | | |

c. Job speed

• BLI standards

| | AR-M550N/M550U | AR-M620N/M620U | AR-M700N/M700U |
|-------|----------------|----------------|----------------|
| S → S | 50.1cpm (91%) | 56.4cpm (91%) | 63.0cpm (90%) |
| S → D | 49.0cpm (89%) | 53.3cpm (86%) | 58.8cpm (84%) |
| D → D | 51.7cpm (94%) | 57.0cpm (92%) | 63.0cpm (90%) |

- * S → S: A4/8 x 11 documents 10 sheets, copy 5 sets
- * S → D: A4/8 x 11 documents 10 sheets, copy 5 sets
- * D → D: A4/8 x 11 documents 10 sheets (20 pages), copy 5 sets

• Berti standards

| | AR-M550N/M550U | AR-M620N/M620U | AR-M700N/M700U |
|-------|----------------|----------------|----------------|
| S → S | 46.2cpm (84%) | 50.8cpm (82%) | 57.9cpm (82%) |
| S → D | 33.6cpm (61%) | 34.1cpm (55%) | 36.9cpm (52%) |
| D → D | 49.0cpm (89%) | 53.9cpm (87%) | 58.7cpm (83%) |

- * S → S: A4/8 x 11 documents 5 sheets, copy 5 sets
- * S → D: A4/8 x 11 documents 10 sheets, copy 1 set
- * D → D: A4/8 x 11 documents 5 sheets (10 pages), copy 5 sets

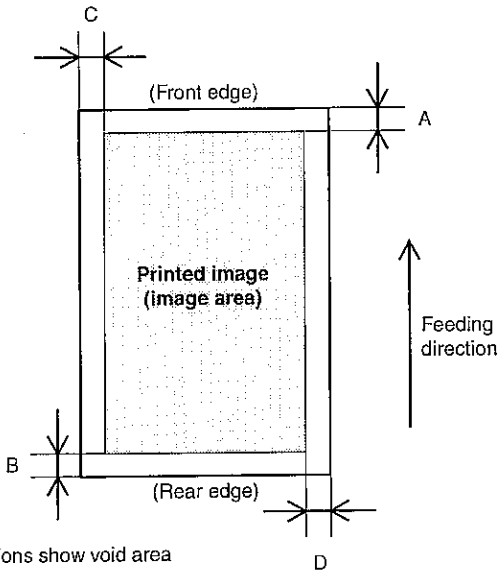
d. Maximum no. of copies

| | |
|---------------------|------------|
| Multi max. quantity | 999 sheets |
|---------------------|------------|

• Max copy set quantity by each copy mode

| | |
|------------------|------------|
| Single-side copy | 999 sheets |
| Duplex copy | 999 sheets |

(6) Copy area



• Printable range

| | | | |
|-----------|-------------|-----------|-------------|
| A3 | 289 × 412mm | 11 × 17 | 271 × 424mm |
| B4 | 242 × 356mm | 8.5 × 14 | 208 × 348mm |
| A4 | 202 × 289mm | 8.5 × 13 | 208 × 322mm |
| B5 | 168 × 249mm | 8.5 × 11 | 208 × 271mm |
| A5 | 140 × 202mm | 5.5 × 8.5 | 132 × 208mm |
| Executive | 183 × 259mm | 8K | 270 × 390mm |
| Postcard | 92 × 140mm | 16K | 195 × 270mm |

• Image loss

| | Front edge (A) | Rear edge (B) | Total (C + D) | Left edge (C) | Right edge (D) |
|--|----------------|---------------|---------------|---------------|----------------|
| One side copy (excluding A3 (11 × 17)) | Max. 5mm | Max. 5mm | Max. 6mm | Max. 3.0mm | Max. 3.0mm |
| One side copy for A3 (11 × 17) | Max. 5mm | Max. 7mm | Max. 6mm | Max. 3.0mm | Max. 3.0mm |
| Duplex copying | Max. 5mm | Max. 7mm | Max. 6mm | Max. 3.0mm | Max. 3.0mm |
| OHP copying | Max. 10mm | Max. 10mm | Max. 6mm | Max. 3.0mm | Max. 3.0mm |

• Void area

| | Front edge (A) | Rear edge (B) | Total (C + D) | Left edge (C) | Right edge (D) |
|--|----------------|---------------|---------------|---------------|----------------|
| One side copy (excluding A3 (11 × 17)) | Max. 5mm | Max. 5mm | Max. 8mm | Max. 3.0mm | Max. 3.0mm |
| One side copy for A3 (11 × 17) | Max. 5mm | Max. 7mm | Max. 8mm | Max. 3.0mm | Max. 3.0mm |
| Duplex copying | Max. 5mm | Max. 7mm | Max. 8mm | Max. 3.0mm | Max. 3.0mm |
| OHP copying | Max. 10mm | Max. 10mm | Max. 8mm | Max. 3.0mm | Max. 3.0mm |

• Reference shift (off-center shift) normal ratio

| | | |
|---------------------|-------------|--------|
| Main unit (OC mode) | Simplex | ±1.5mm |
| | Duplex | ±1.7mm |
| Overall (SPF) | Simplex S-S | ±2.8mm |
| | Simplex D-S | ±3.5mm |
| | Duplex S-D | ±3.0mm |
| | Duplex D-D | ±3.5mm |

(7) Copy functions

| | |
|---|--|
| Automatic paper selection | ○ |
| Automatic magnification ratio selection | ○ |
| Vertical/horizontal independent magnification ratio | ○ |
| Paper type selection | ○ By type setup |
| Auto tray switching | ○ |
| Rotation copy | ○ |
| Electronic sort | ○ |
| Rotation sort | ○ |
| Job reservation | ○ |
| Tray installation priority | x |
| Program call/register | ○ |
| Document filing | ○ |
| Preheat function | ○ Set by the key operator |
| Auto power shut off function | ○ Set by the key operator program |
| Dept. management | ○ 500 department |
| Process control | ○ |
| Tandem copy | ○ (Via network) |
| Indefinite document size input | ○ |
| Indefinite paper size input | ○ |
| Binding margin | ○ |
| Edge erase/Center erase | ○ |
| 1 set 2 copy | ○ |
| Cover/Insert paper/Tab insert paper | ○ |
| OHP insert paper | ○ |
| Tab copy | ○ |
| Centering | x |
| Multi shot (N in 1) | ○ (2 in 1/4 in 1) (Centering provided) |
| Card shot | ○ |
| Center binding | ○ (Centering provided) |
| Duplex copy system switch | ○ |
| Large volume document mode | ○ (Max. 10000 sheets) |
| Black-white reversion | ○ |
| Shading | x |
| Mirror image | ○ |
| Enlargement continuous copy | x |
| Repeat | x |
| Date print | x |
| Stamp | x |
| Page print | x |

C. Image send function

(1) Mode

Scanner (Scan to E-mail, Scan to Sharp desk, Scan to FTP, Scan to HDD), FAX, Internet FAX

(2) Support system

| Mode | Scanner | Internet FAX | FAX |
|------------------|---------------------------|---|-----|
| Supported server | SMTP server FTP server | POP server SMTP server ESMTP server | — |

(3) Support image

| Mode | TIFF, PDF, TIFF-F, TIFF-FX | | |
|--------------------|---|--------------|----------------------|
| Compression system | Scanner | Internet FAX | FAX |
| | Non-compression G3 (1st dimension) = MH (Modified Huffman) G4 = MMR (Modified MR) | MH, MMR | MH, MR, MMR, JBIG |

(4) Image process

| Mode | Scanner | Internet FAX | FAX |
|---|-------------------------------------|--------------|--------------------------------|
| half tone reproduction | Equivalent to 256 gradations | | |
| Density adjustment | Auto + 5 steps | | |
| Image quality selection | Half tone ON/OFF (*: Not available) | | |
| Resolution (Differs depending on the file type/communication system.) | 200x200dpi * | 200x100dpi * | Normal text (203.2x97.8dpi)* |
| | 300x300dpi | 200x200dpi | Small text (203.2x195.6dpi) |
| | 400x400dpi | 200x400dpi | Fine text (203.2x391dpi) |
| | 600x600dpi | 400x400dpi | Ultra fine text (406.4x391dpi) |
| | — | 600x600dpi | — |

(5) Address specification

| Mode | Scanner | Internet FAX | FAX |
|-------------------------------------|--|--------------|--|
| LDAP | ○ (Can be registered as one-touch address.) | | |
| Address specification | Specified by one-touch, group, or direct address input. | | |
| No. of one-touch registration items | Max. total 999 items (of which 200 can be assigned to FTP and/or desktop) | | |
| Group | ○ Registered from the one-touch dial and the direct dial. (Max. 500 items) | | |
| Program | ○ (8 items) | | |
| Direct address input | Soft keyboard | | Input by the 10-key, # key, and * key. |
| Chain dial (Direct address input) | — | | Used together with Pause. Up to 64 digits. |
| Resend | The previous address is called. | | |
| Reduction address selection | The address registration number is called by the 10-key input. | | |

(6) Multiple address specification

| Mode | Scanner | Internet FAX | FAX |
|---|--|--------------|-----|
| Address specification | Specified by one-touch, group, or direct address input * | | |
| No. of registration items of direct address input * | Max. total 5000 items of group/interface broadcast | | |
| Broadcast send | ○ (Broadcast send is disabled for FTP/Desktop) | ○ | |
| Sequential send request | — | | ○ |

*: Direct address input: 10-key other than one-touch, and soft keyboard input

- When broadcast includes FAX, the resolution is set to the FAX resolution.
- The compression system in broadcast conforms to the key operator setup.

(7) Functions

| Mode | | Scanner | Internet FAX | FAX | |
|--------------------------------------|--|--|---|-----------------------------|---|
| Send function | Memory transmission | — | ○ | | |
| | Onhook | — | | ○ | |
| | Quick online send | — | | ○ | |
| | Direct transmission | — | | Only in Onhook | |
| | Automatic reduction send | — | | ○ A3 → B4, A3 → A4, B4 → A4 | |
| | Rotation send | ○ | | | |
| | Zoom send | ○ (Zooming of fixed size → fixed size only.) | | | |
| | Recall mode | Error | — | ○ | |
| | | Busy | — | — | ○ |
| | | | Number of times/time are set by the key operator. | | |
| | Book document send | ○ | | | |
| | Long document send | ○ | ○ | ○ | |
| | | Max. 800mm | | | |
| | File division send | ○ | — | | |
| | Send size limit | ○ | ○ | — | |
| No. of registration items of senders | Max. 999 items | | | | |
| Receive function | Automatic reception | — | ○ | | |
| | Manual reception | — | ○ | | |
| | Memory receive | — | ○ | | |
| | Fixed size reduction receive | — | ○ | | |
| | Specified size zoom receive | — | | | |
| | Rotation receive | — | ○ | | |
| | Division receive | — | ○ Conditions are set by the key operator. | | |
| | Duplex receive | — | ○ Conditions are set by the key operator. | | |
| | 2 in 1 receive | — | | | |
| | Domain/Address specification receive enable | — | ○ (50 items) | — | |
| | Domain/Address specification receive disable | — | ○ (50 items) | Specified number only | |
| | Automatic switch of TEL/FAX | — | | ○ (Japan only) | |
| | External telephone connection remote | — | | ○ | |
| | Answering telephone connection | — | | × (PAT countermeasure) | |

| Mode | | Scanner | Internet FAX | FAX |
|----------------------|--|------------------|--------------|---|
| Receive function | Transfer function when output is disable | — | | ○ |
| | Automatic boot mode | — | | ○ |
| Special functions | Time specification | | ○ | |
| | Poling receive | — | — | ○ |
| | Bulletin board send | — | — | ○ |
| | Cover function | — | — | × |
| | Sender print | — | | ○ |
| | Page division | | ○ | |
| | Page connection | | × | |
| | Confidential (Remote machine) | — | | ○ (F code system) |
| | Relay broadcast indication | — | | ○ (F code system) |
| | Send message | × | | |
| | Edge erase | ○ | | |
| | Center erase | ○ | | |
| | Multi shot | ○ (2 in 1) | | |
| | Card shot | ○ | | |
| Report/List function | Communication record table | × | | ○ |
| | Communication result table | | ○ | |
| | Address/Telephone number table | | ○ | |
| | Group table | | ○ | |
| | ID, sender address table | | — | |
| | Sender table | ○ | | × |
| | Confidential box check table | — | | ○ (Integrated into the memory box table.) |
| | Interface group table | — | | ○ (Integrated into the memory box table.) |
| | Program table | ○ | | |
| | Send reservation table | × | | |
| | Memory box table | — | | ○ (FAX mode only) |
| | Memory contents Clear notification table | — (Error report) | | |
| | Other | PC send | — | PC-iFAX PC-FAX |

(8) Transmission system

| Mode | Scanner | Internet FAX | FAX |
|----------------------|---------|--------------|--|
| Transmission time | — | — | Between 2 and 3sec (Super G3/JBIG) Between 6 and 7sec (G3 ECM) |
| Modem speed | — | — | 33.6kbps → 2.4kbps automatic fall back |
| Mutual communication | — | — | Super G3/G3 |
| Communication line | — | — | Public Switched Telephone Network (PSTN), Private Branch Exchange (PBX), F net |
| ECM | — | — | ○ |

(9) Record size

| Mode | Scanner | Internet FAX | FAX |
|-------------------|---------|--------------|---------------------------------|
| Max. record width | — | — | 293mm |
| Record size | — | — | A3 – A5, 11"x17" – 5.5"x8.5" |

(10) F code communication

| Mode | Scanner | Internet FAX | FAX |
|-------------|---------|--------------|-----|
| Sub address | — | — | ○ |
| Pass code | — | — | ○ |

D. Printer function

Standard for the AR-M550N/M620N/M700N. The Printer expansion kit AR-P19 is required for the AR-M550U/M620U/M700U.

(1) Platform

| |
|---|
| IBM PC/AT (or compatible) |
| Macintosh (MacOS8.6 or later (excluding MacOS10.2.2) and Apple-Talk applicable) |

(2) Support OS

| | |
|-------------------------|--|
| Custom PS | Windows 95/98/Me Windows NT 4.0 Windows 2000 Windows XP |
| Custom PCL5e/6(XL)SPDL2 | Windows 95/98/Me Windows NT 4.0 Windows 2000 Windows XP |
| PPD | Windows 95/98/Me Windows NT 4.0 Windows 2000 Windows XP Mac OS8.6 – 9.x, 10.1.5 and 10.2 – 10.2.8 (excluding 10.2.2) |

(3) PDL emulation

PCL5e compatible, PCL6 compatible, SPDL2 (Japan only), PostScript3 compatible (option)

(4) ESC/P, ESC/P super

(Japan only)

| | |
|----------------|--|
| Emulation | ESC/P (VP-1100), ESC/P_super |
| Built-in fonts | Japanese: Mincho, Gothic (bitmap) ANK: Roman, Sans Serif (Bitmap) |

(5) Built-in fonts

The printing system is provided with standard fonts of one type of HP compatible bitmap font and 80 types of Latin outline fonts for PCL.

In addition, by use of the PS expansion kit, 136 types of Latin outline fonts and 5 types of Japanese outline fonts are available.

| | |
|-----------------|--|
| Bitmap fonts | 1 kind of font |
| PCL5 Latin font | 80 PCL Latin fonts (SPDL) Standard built-in fonts |
| PCL Kanji font | Option (2 ACT Fonts) |
| PS Latin font | 136 Type 1 Latin fonts Auxiliary to the PS expansion kit |
| PS kanji font | 5 Type 1 Kanji Fonts Auxiliary to the PS expansion kit (Japan only) |
| Bar code font | Option |

(6) Print channel

| | |
|--|---|
| Support print channel | IEEE1284 parallel port PSEVER/RPRINT for NetWare environment LPR IPP PAP: EtherTalk (AppleTalk) FTP NetBEUI Raw Port (Port 9100) USB2.0 |
| IEEE1284 parallel port | Receives print data via the standard IEEE1284 parallel port. |
| USB | USB 1.1: Windows98/98SE/Me/2000/XP only USB 2.0: Windows 2000 / XP only |
| For NetWare environment PSEVER/RPRINT | Used in NetWare environment. Print channel in the PSEVER/PRINT mode. |
| LPR | UNIX LPR/LPD command compatible print channel |
| IPP | IPP 1.0 conforming print channel |
| PAP: EtherTalk (AppleTalk) | Print channel used in the Macintosh environment |
| FTP | Function to print receive data by use of the built-in FTP server. |
| NetBEUI | Microsoft NetBEUI compatible print channel |
| Port9100 | Supports TCP port 9100 (Raw port). |

(7) Print function

| | |
|-----------------------|-----------------------------|
| Bar code font | (JetCAPS BarDIMM emulation) |
| EZ cluster | x |
| PDF/TIFF direct print | ○ |

(8) Compatibility

| | |
|-------------------|---|
| PCL 5e compatible | PCL5e is aimed to provide compatibility with HP LaserJet 4050. A small difference in margin, a difference in rendering caused by a different font family, the default, a difference in the transfer function are not included in the compatibility. Not all PCL commands are included in the compatibility. |
| PCL6 compatible | PCL6 is aimed to provide compatibility with HP LaserJet 4050. A small difference in margin, a difference in rendering caused by a different font family, the default, a difference in the transfer function are not included in the compatibility. Not all PCL commands are included in the compatibility. |

| | |
|----------------------------------|--|
| PostScript compatible | PostScript is aimed to provide compatibility with Adobe PostScript. A small difference in margin, a difference in rendering caused by a different font family, the default, a difference in the transfer function are not included in the compatibility. |
| ESX/P and ESC/P Super compatible | ESC/P and ESC/P Super are aimed to provide compatibility with Epson VP-1100. A small difference in margin, a difference in rendering caused by a different font family, the default, a difference in the transfer function are not included in the compatibility. |

(9) Environment setting

| Setting item | General |
|--|--|
| Default setting | Basic setting of printing such as the number of copies and printing direction. |
| PCL (SPDL*) setting * SPDL is for Japan only. | PCL (SPDL) symbol setting and font setting |
| PS setting | Setting of print enable/disable in a PS error |
| ESC/P (super) setting (Japan only) | ESC/P font and return code setting |

(10) Windows driver function

a. Frequently used functions

| Function | PCL5e | PCL6 | PS | PPD *1 (In the case of Windows XP) |
|-------------------|---|-------------------------|---|---------------------------------------|
| Number of copies | 1 – 999 | | | |
| Print direction | Vertical/Horizontal | | Vertical/Horizontal/Horizontal rotation (*2) | |
| Duplex print | Simplex print, duplex print (Left/Upper/Right binding) | | Simplex print, duplex print (Long side/Short side binding) (*2) | |
| Center binding | Invoice on Letter, Letter on Ledger, A5 on A4, A4 on A3, B5 on B4, Letter on Letter, Ledger on Ledger, A4 on A4, A3 on A3, B4 on B4 | | Yes (2up booklet only) (*2) | |
| Binding direction | Simplex print, duplex print (Left/Upper/Right binding) | | – | |
| N-up | 2/4/6/8 | | 2/4/6/9/16 (*2) | |
| N-up direction | Z | Z/Reverse Z/N/Reverse N | Z (*2) | |
| N-up frame line | ○/X | | ○ (Always ○) (*2) | |

*1: For printing, the PS driver bundled in Windows is required.

*2: The PS driver bundled in Windows may differ in specifications depending on the OS.

b. Paper feed system

| Function | PCL5e | PCL6 | PS | PPD *1 (In the case of Windows XP) |
|-----------------------------|---|------|----|---------------------------------------|
| Paper size | A3/B4/A4/B5/A5/Postcard/Ledger/Legal/Foolscap/Letter/Executive/Invoice/8K/16K | | | |
| Paper type | Normal paper, letterhead, printed paper, punched paper, recycled paper, color paper, label sheet, thick paper, OHP, tab paper | | | |
| User definition type | 7 types | | | — |
| Paper feed method | Auto paper feed, Tray 1/2/3/4/5, manual feed | | | |
| Cover paper/Back cover page | ○/X Setting of Duplex/Simplex/No print | | | — |

| Function | PCL5e | PCL6 | PS | PPD *1 (In the case of Windows XP) |
|------------------|---|------|----|---------------------------------------|
| Insert paper | ○/X Setting of Duplex/Simplex/No print | | | – |
| OHP insert paper | X, ○ (White paper), ○ (Printed paper) | | | – |

*1: For printing, the PS driver bundled in Windows is required.

c. Paper exit method

| Function | PCL5e | PCL6 | PS | PPD *1 (In the case of Windows XP) |
|--------------------------------|--|------|----|---------------------------------------|
| Paper exit destination setting | Center tray Finisher → Tray 1 Finisher → Tray 2 Saddle stitch finisher → Tray 1 Saddle stitch finisher → Tray 2 Saddle stitch finisher → Saddle stitch tray | | | |
| Staple | Finisher • No staple • 1 position • 2 positions Saddle stitch finisher • No staple • 1 position • 2 positions | | | |
| Offset | ○/X | | | |

*1: For printing, the PS driver bundled in Windows is required.

*2: The PS driver bundled in Windows may differ in specifications depending on the OS.

d. Exposure

| Function | PCL5e | PCL6 | PS | PPD *1 (In the case of Windows XP) |
|------------------------|--|---|--|---|
| Resolution | 600/300dpi | | 600dpi | 600dpi |
| Halftone | – | ○/X (AR-M550N/U, AR-M620N/U) – (AR-M700U/N) | Screen Frequency 8.0 to 360.0 in 0.1 steps Screen angle 0.0 to 360.0 in 0.1 steps | – |
| Graphic mode selection | Luster HP-GL2 | Luster vector | – | |
| Smoothing | ○/X (AR-M550N/U, AR-M620N/U) – (AR-M700U/N) | | | ○/X (AR-M550N/U, AR-M620N/U) – (AR-M700U/N: Display only and no function) |
| Toner save | ○/X | | | |
| Ultra fine photo | – | | | |
| Black-white reversion | – | | ○/X | |
| Mirror image | – | | Horizontal/ Vertical | Horizontal (*2) |
| Zoom | – | | 25 – 400% (XY independent) | 1 – 1000% (*2) |
| Fit page | ○/X | | | – |

*1: For printing, the PS driver bundled in Windows is required.

*2: The PS driver bundled in Windows may differ in specifications depending on the OS.

e. Font

| Function | PCL5e | PCL6 | PS | PPD *1 (In the case of Windows XP) |
|---------------------------------------|------------------|--------------------------|---|---------------------------------------|
| Download system which can be selected | Bitmap, TrueType | Bitmap, Type 1, TrueType | Auto, Outline, Bitmap, Native TrueType (*2) | |

*1: For printing, the PS driver bundled in Windows is required.

*2: The PS driver bundled in Windows may differ in specifications depending on the OS.

f. Other functions

| Function | PCL5e | PCL6 | PS | PPD *1 (In the case of Windows XP) |
|---|-------|------|----|---------------------------------------|
| Units composition setting | ○ | | | |
| Watermark | ○ | | | ○ (Limitations on functions) |
| Overlay | ○ | | | — |
| Print hold | ○ | | | — |
| Job retention | ○ | | | — |
| Sample print | ○ | | | — |
| Print department management | ○ | | | — |
| User setting | ○ | | | — |
| Option auto setting | ○ | | | — |
| Job complete notification | ○ | | | — |
| Tandem print | ○ | | | — |
| Carbon print | ○ | | | — |
| Enlargement continuous copy | — | | | — |
| Vertical/horizontal independent magnification ratio | — | ○ | | — |
| Cover insertion +center binding | ○ | | | — |
| Document filing | ○ | | | — |

*1: For printing, the PS driver bundled in Windows is required.

(11) Macintosh driver functions

a. Frequently used functions

| Function | Macintosh PPD (in the case of Mac OS X Ver.10.2.8) |
|------------------|---|
| Number of copies | 1 – 999 |
| Print direction | Vertical/Horizontal/Horizontal rotation (*1) |
| Duplex print | Simplex print, duplex print, pamphlet (Left/Right/Upper binding) |
| Center binding | ○ |
| N-up | 2/4/6/9/16 (*1) |
| N-up direction | Z/Reverse Z/N/Reverse N (*1) |
| N-up frame line | None / Single Hairline / Single Thinline / Double Hairline / Double Thinline (*1) |

*1: The PS driver bundled in Macintosh may differ in specifications depending on the OS.

b. Paper feed method

| Function | Macintosh PPD (in the case of Mac OS X Ver.10.2.8) |
|--------------------|---|
| Paper size | A3/B4/A4/B5/A5/Postcard/Ledger/Legal/Foolscap/Letter/Executive/Invoice/8K/16K |
| Paper type setting | Normal paper/Letter head/Printed paper/Punched paper/Recycled paper/Color paper/Label paper/Heavy paper/OHP/Tab paper |

| Function | Macintosh PPD (in the case of Mac OS X Ver.10.2.8) |
|---|---|
| User definition type | — |
| Paper feed method | Auto paper feed, Tray 1/2/3/4/5, manual feed |
| Paper feed tray of the first page | ○/X (*1) |
| Cover paper/Back cover paper/Insert paper | — (OS9 only: None/before document/after document) (*1) |
| OHP insert paper | X, ○ (White paper), ○ (Printed paper) |

*1: The PS driver bundled in Macintosh may differ in specifications depending on the OS.

c. Paper exit method

| Function | Macintosh PPD (in the case of Mac OS X Ver.10.2.8) |
|--------------------------------|--|
| Paper exit destination setting | Center tray Finisher Tray 1 Tray 2 Saddle stitch finisher Tray 1 Tray 2 Saddle stitch tray |
| Staple | Finisher • No staple • 1 position • 2 positions Saddle stitch finisher • No staple • 1 position • 2 positions |
| Offset | ○/X |

d. Exposure

| Function | Macintosh PPD (in the case of Mac OS X Ver.10.2.8) |
|------------------------|---|
| Resolution | 600dpi |
| Half tone | — |
| Graphic mode selection | — |
| Smoothing | ○/X (AR-M550N/U, AR-M620N/U) — (AR-M700N/U) |
| Toner save | ○/X |
| Ultra fine photo | ○/X (AR-M550N/U, AR-M620N/U) — (AR-M700N/U) |
| Black-white reversion | — |
| Mirror image | — |
| Zoom | 1-100000 (*1) |
| Fit page | — |

*1: The PS driver bundled in Macintosh may differ in specifications depending on the OS.

e. Font

| Function | Macintosh PPD (in the case of Mac OS X Ver.10.2.8) |
|---------------------------------------|---|
| Download system which can be selected | — (Selection allowed only with Mac OS9 (LaserWriter)) (*1) |

*1: The PS driver bundled in Macintosh may differ in specifications depending on the OS.

f. Other functions

| Function | Macintosh PPD (in the case of Mac OS X Ver.10.2.8) |
|---------------------------|---|
| Units composition setting | ○ |
| Watermark | ○ |
| Overlay | x |
| Print hold | ○ |
| Job retention | ○ (PIN code input enable) |

| Function | Macintosh PPD (in the case of Mac OS X Ver.10.2.8) |
|---|---|
| Sample print | ○ |
| Print department management | ○ |
| User setting | — |
| Option auto setting | — (OS9 only: ○) |
| Job complete notification | — |
| Tandem print | ○ |
| Tab print | — |
| Carbon print | — |
| Enlargement continuous copy | — |
| Vertical/horizontal independent magnification ratio | — |
| Cover insertion +center binding | — |
| Document filing | Yes (*1) |

(12) Print performance

| Model | PDL type | Word: script.doc (jpn) 9 pages in total | Excel: EXCL.xls 3 pages in total | PowerPoint: J11.ppt 12 pages in total |
|--------------------|-----------------|--|---|--|
| AR-M550N/ M550U | PCL5 (SPDL2) | 14sec | 9sec | 28sec |
| AR-M620N/ M620U | PCL5 (SPDL2) | 13sec | 8sec | 24sec |
| AR-M700N/ M700U | PCL5 (SPDL2) | sec | sec | sec |

* Measurement conditions
 Windows
 PC: Pentium III 1GHz 128MB
 OS: Windows XP Professional
 Macintosh
 PC: PowerPC G3 700MHz 256MB
 OS: MacOS X
 Driver setting: Default
 Software: Microsoft Office XP

E. Document filing function

(1) Basic function

| | | |
|--|--|--------------------------------|
| Document filing capacity | 16GB | |
| Fixed folder | Standard folder | Max. 20000 pages or 3000 files |
| | Temporary folder | Max. 10000 pages or 1000 files |
| Number of pages for one file | Conforms to the large volume document mode. (Within the HD capacity) | |
| Number of folders which can be formed in the user folder | Max. 500 folders | |
| Number of users which can be registered | Max. 500 users | |

(2) Data operation by each function (For S/U models, temporary saving only.)

| Job | Each folder in the standard folder/user folder | | Temporary folder | |
|----------------------|--|-------------------|------------------|-------------------|
| | Common data | Confidential data | Common data | Confidential data |
| Copy | ○ | ○ | ○ | × |
| Printer | ○ | ○ | ○ | × |
| Scan to E-mail/FTP | ○ | × | ○ | × |
| Scan to HDD | ○ | ○ | × | × |
| FAX receive | × | × | × | × |
| FAX send | ○ | × | ○ | × |
| i-FAX receive | × | × | × | × |
| i-FAX send | ○ | × | ○ | × |
| PC FAX/PC i-FAX send | ○ | × | ○ | × |

(3) Data operation contents

| A: S/U model alone B: Printer expansion kit (AR-P19) C: Network expansion kit (AR-NS3) D: FAX expansion kit (AR-FX8) | | | | | | |
|---|---|-------------------------------|-------------------------------|---|-------------------------------|-------------------------------|
| | A (S/U model) | A+B (M/N model) | A+C (+B) | A+D | A+B+D | A+B+C+D |
| Reprint | ○ | ○ | ○ | ○ | ○ | ○ |
| Resend *1 | × | ○ | ○ | ○ | ○ | ○ |
| Delete | ○ | ○ | ○ | ○ | ○ | ○ |
| Shift | × | ○ | ○ | × | ○ | ○ |
| Attribute change *2 (Protection from common use, etc.) | ○ (Protection from common use <> only) | ○ | ○ | ○ (Protection from common use <> only) | ○ | ○ |
| File name change | ○ | ○ | ○ | ○ | ○ | ○ |
| Folder making (in the user folder) | × | ○ | ○ | × | ○ | ○ |
| File transfer to the local PC, FTP server | × | ○ | ○ | × | × | ○ |
| Machine HDD occupying rate display | × | ○ | ○ | × | ○ | ○ |
| Print log display, CSV export | × | ○ (Enable only on the Web) | ○ (Enable only on the Web) | × | ○ (Enable only on the Web) | ○ (Enable only on the Web) |
| Print data image view | × | ○ (Enable only on the Web) | ○ (Enable only on the Web) | × | ○ (Enable only on the Web) | ○ (Enable only on the Web) |
| Retrieval | ○ (Simple) | ○ (Simple) | ○ (Simple) | ○ (Simple) | ○ (Simple) | ○ (Simple) |

*1: The resend enable modes (E-mail send, FAX send, internet FAX send, PC-FAX send, PC-i-FAX send) vary depending on the installation conditions of options.

*2: Attribute change: The file attribute is changed from "Common" to "Protection"/"Confidential", etc.

(4) Upper limit value of the storable file, folder, and user

| | |
|---|----------------------------------|
| The number of files storable in the standard folder and the user folder | Max. 3,000 files or 20,000 pages |
| The number of files storable in the temporary storage folder | Max. 1,000 files or 10,000 pages |
| The number of files storable in the user folder | Max. 500 folders |
| Number of users which can be registered | Max. 500 users |

4. Safety and environmental protection standards

A. Safety standards

| Item | Standard |
|---|---|
| Safety standards | Electric safety regulations |
| | UL |
| | CSA |
| | CE (SEMKO) |
| | GB4943 |
| Environmental standards (EMC) | VCCI Class B |
| | FCC Class B |
| | CISPR22 B |
| | GB9254-1998 CLASSB |
| | GB17625.1-1998 |
| | GB17625.2-1999 |
| | GB/T17618-1998 |
| Line standards (When the FAX expansion board is installed.) | Technical standard conformity acknowledgement (Telecommunications Business Law) |
| | FCC part 68 |
| | ICCS-03 |
| | ECCTR-21 |
| | A-Tick |

B. Environmental standards

(1) Power consumption and environmental standards

| Standard |
|---|
| International energy program complex machine (EPS) |
| Environmental Choice Program (ECP) |
| Conforms to New Blue Angel. |
| Nordic swan (Sharp: Follows the Green Product Declaration.) |

(2) Ozone level

| |
|----------------------------|
| Max. 0.02mg/m ³ |
|----------------------------|

(3) Noise level

| Model | Operating | Standby |
|----------------|--------------|--------------|
| AR-M550N/M550U | 7.3B or less | 5.5B or less |
| AR-M620N/M620U | 7.3B or less | 5.5B or less |
| AR-M700N/M700U | 7.3B or less | 5.5B or less |

5. Ambient conditions

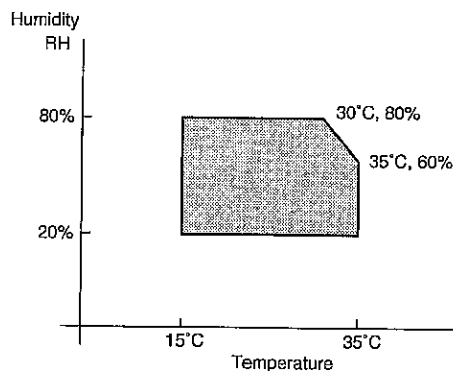
A. Space required

(1) Area required

| | |
|-------------------|--|
| Main unit | 1263 × 679mm |
| With full options | 2163×691.5mm (With the AR-LC6, AR-F15, AR-F16, AR-CF2 installed) |

B. Operating ambient conditions

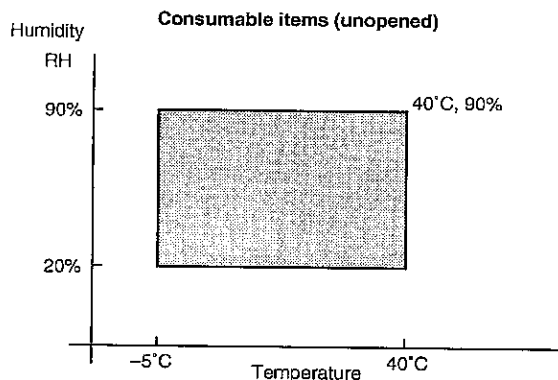
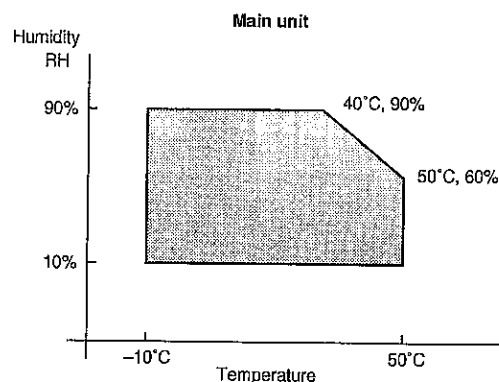
(1) Temperature/Humidity



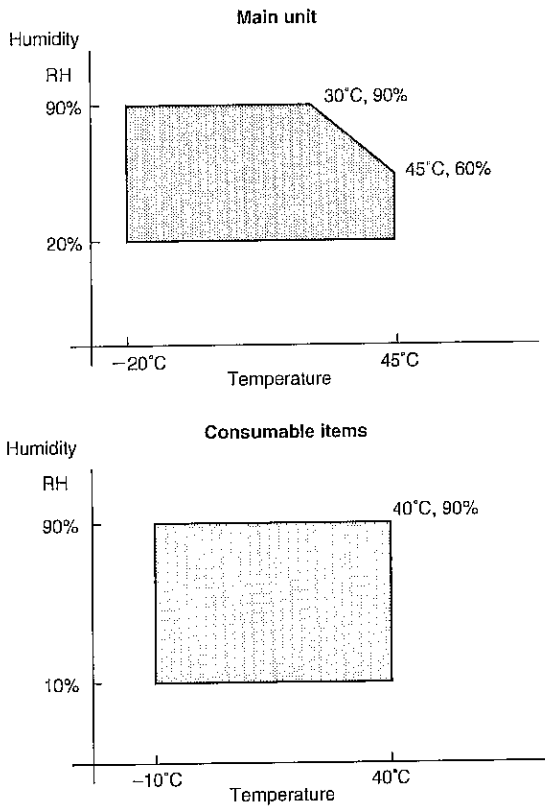
(2) Power supply voltage and frequency

| | |
|------------------------|----------------------|
| Power supply voltage | Rated voltage ± 10% |
| Power supply frequency | Rated frequency ± 2% |

C. Ambient storage conditions



D. Ambient conditions for transporting



E. Standard temperature and humidity

| | |
|-------------|------------|
| Temperature | 20 to 25°C |
| Humidity | 65 ± 5% RH |

6. Service related items

| | |
|------------------------------------|---|
| Device cloning | ○ |
| Address book send/ receive tool | ○ |
| Humidifier heater | SEC only (Standard provision for Japan model) (Supplied as a service part) |
| RIC | Telephone line RIC terminal available E-mail RIC available (Conforming to soft key.) |
| Coin vendor terminal | ○ |
| Card counter | Angle/Harness parts supply |
| Key counter (SF-71A/B) | Only the harness is left. |
| Mechanical counter | Conforming to 7-digit OEM For SHARP (Parts support) |

[4] CONSUMABLE PARTS

1. Supply system table

A. USA, Canada, South and Central America

| No. | Part name | Content | Life | Model name | Packing | Remark |
|-----|-------------------------|---|-------------------------------|------------|---------|--|
| 1 | Toner cartridge (Black) | Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip | 720k (72k x 10) | AR-620MT | 1 | * Life setting by A4/LT 6% document MT = NT x 10 |
| | | Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip | 830k (83k x 10) | AR-621MT | | |
| 2 | Developer (Black) | Developer (Black) x 10 (Developer; Net weight 725g) | 62/70ppm: 300k 55ppm: 250k | AR-620MD | 1 | Used two bags. MD = ND x 10 |
| 3 | Drum | OPC drum x 1 | 62/70ppm: 300k 55ppm: 250k | AR-620DR | 10 | |

B. Europe affiliates (Including East Europe, Russia)/Australia/New Zealand/UK)

| No. | Part name | Content | Life | Model name | Packing | Remark |
|-----|-------------------------|---|-------------------------------|------------|---------|---|
| 1 | Toner cartridge (Black) | Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip | 720k (72k x 10) | AR-620LT | 1 | * Life setting by A4/LT 6% document LT = T x 10 |
| | | Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip | 830k (83k x 10) | AR-621LT | | |
| 2 | Developer (Black) | Developer (Black) x 10 (Developer; Net weight 725g) | 62/70ppm: 300k 55ppm: 250k | AR-620LD | 1 | Used two bags. LD = DV x 10 |
| 3 | Drum | OPC drum x 1 | 62/70ppm: 300k 55ppm: 250k | AR-620DM | 10 | |

C. Asia affiliates

| No. | Part name | Content | Life | Model name | Packing | Remark |
|-----|-------------------------|---|-------------------------------|------------|---------|--|
| 1 | Toner cartridge (Black) | Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip | 720k (72k x 10) | AR-620CT | 1 | * Life setting by A4/LT 6% document CT = ST x 10 |
| | | Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip | 830k (83k x 10) | AR-621CT | | |
| 2 | Developer (Black) | Developer (Black) x 10 (Developer; Net weight 725g) | 62/70ppm: 300k 55ppm: 250k | AR-620CD | 1 | Used two bags. CD = SD x 10 |
| 3 | Drum | OPC drum x 1 | 62/70ppm: 300k 55ppm: 250k | AR-620DR | 10 | |

D. Hong Kong

| No. | Part name | Content | Life | Model name | Packing | Remark |
|-----|------------------------------------|---|-------------------------------|------------|---------|---|
| 1 | Toner cartridge (Black) For SRH | Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip | 720k (72k x 10) | AR-620CT-C | 1 | * Life setting by A4/ LT 6% document CT-C = ST-C x 10 |
| | | Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip | 830k (83k x 10) | AR-621CT-C | | |
| 2 | Developer (Black) | Developer (Black) x 10 (Developer; Net weight 725g) | 62/70ppm: 300k 55ppm: 250k | AR-620CD-C | 1 | Used two bags. CD-C = SD-C x 10 |
| 3 | Drum | OPC drum x 1 | 62/70ppm: 300k 55ppm: 250k | AR-620DR-C | 10 | |

E. China (AR-M620N/M700N)

| No. | Part name | Content | Life | Model name | Packing | Remark |
|-----|-------------------------|---|----------------|------------|---------|--|
| 1 | Toner cartridge (Black) | Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip | 72k (72k x 1) | AR-621ST-C | 1 | * Life setting by A4/LT 6% document |
| | | Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip | 83k (83k x 1) | AR-622ST-C | | |
| 2 | Developer (Black) | Developer (Black) x 10 (Developer; Net weight 725g) | 62/70ppm: 300k | AR-620SD-C | 1 | Used two bags. |
| 3 | Drum | OPC drum x 1 | 62/70ppm: 300k | AR-620DR-C | 1 | |

F. Middle East/Philippine

| No. | Part name | Content | Life | Model name | Packing | Remark |
|-----|-------------------------|---|-------------------------------|------------|---------|--|
| 1 | Toner cartridge (Black) | Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip | 720k (72k x 10) | AR-620ET | 1 | * Life setting by A4/LT 6% document ET=FT x 10 |
| | | Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip | 830k (83k x 10) | AR-621ET | | |
| 2 | Developer (Black) | Developer (Black) x 10 (Developer; Net weight 725g) | 62/70ppm: 300k 55ppm: 250k | AR-620CD | 1 | Used two bags. CD = SD x 10 |
| 3 | Drum | OPC drum x 1 | 62/70ppm: 300k 55ppm: 250k | AR-620DR | 10 | |

G. Taiwan

| No. | Part name | Content | Life | Model name | Packing | Remark |
|-----|-------------------------|---|-------------------------------|------------|---------|--|
| 1 | Toner cartridge (Black) | Toner cartridge (Black) x 10 (Toner; Net weight 1430g) With IC chip | 720k (72k x 10) | AR-620ET | 1 | * Life setting by A4/LT 6% document ET=FT x 10 |
| | | Toner cartridge (Black) x 10 (Toner; Net weight 1650g) With IC chip | 830k (83k x 10) | AR-621ET | | |
| 2 | Developer (Black) | Developer (Black) x 10 (Developer; Net weight 725g) | 62/70ppm: 300k 55ppm: 250k | AR-620LD | 1 | Used two bags. LD = DV x 10 |
| 3 | Drum | OPC drum x 1 | 62/70ppm: 300k 55ppm: 250k | AR-620DM | 10 | |

2. Maintenance parts list

A. USA, Canada

| No. | Name | Content | Life | | | Model name | Packing | Remark |
|-----|---|---|----------------|----------------|----------------|------------|---------|-------------------------------|
| | | | 55cpm | 62cpm | 70cpm | | | |
| 1 | Maintenance kit 1 | Side seal F x 1 | 250K | 300K | 300K | AR-620KA | 10 | |
| | | Side seal R x 1 | | | | | | |
| | | MC cleaning unit x 1 | | | | | | |
| | | Cleaner blade x 1 | | | | | | |
| | | Drum separation pawl x 4 | | | | | | |
| | | Screen grid x 1 | | | | | | |
| | | Toner reception seal x 1 | | | | | | |
| | | Charging plate x 1 | | | | | | |
| | | Paper dust removal unit x 1 | | | | | | |
| | | DV seal x 1 | | | | | | |
| | | DV side seal F x 1 | | | | | | |
| | | DV side seal R x 1 | | | | | | |
| | | Toner filter x 1 | | | | | | |
| 2 | Maintenance kit 2 | Transfer cleaning roller x 1 | 250K | 300K | 300K | AR-620KB | 10 | |
| | | Transfer belt x 1 | | | | | | |
| | | Transfer roller x 1 | | | | | | |
| | | Transfer gear x 1 | | | | | | |
| 3 | Upper heat reoller kit | Upper heat roller x 1 | 250K | 300K | 300K | AR-620UH | 10 | |
| | | Fusing separation pawl (Upper) x 6 | | | | | | |
| 4 | Lower heat roller kit | Lower heat roller x 1 | 250K | 300K | 300K | AR-620LH | 10 | |
| | | Fusing separation pawl (lower) x 2 | | | | | | |
| 5 | Cleaner blade | Cleaner blade x 10 | 250K (x 10) | 300K (x 10) | 300K (x 10) | AR-620CB | 1 | AR-620CB = (AR-620BL) x 10 |
| 6 | Cleaning roller kit (55/62cpm model) | Scraper unit x 10 | 250K (x 10) | 300K (x 10) | — | AR-620CR | 1 | AR-620CR = (AR-620RC) x 10 |
| | | Sub heat roller cleaning unit x 10 | | | | | | |
| 7 | Maintenance kit 3 (70cpm model) | Cleaning sheet x 10 | — | — | 300K | AR-700CR | 1 | |
| | | Oil roller x 10 | | | | | | |
| | | Cleaning roller bearing x 20 | | | | | | |
| | | Pressure cleaning plate x 10 | | | | | | |
| 8 | Heat roller kit | Sub heat roller x 1 | 250K | 300K | 300K | AR-620HR | 10 | |
| | | Heat roller bearing x 2 | | | | | | |
| 9 | DSPF roller kit | SPF paper feed roller x 1 | 100K | 100K | 100K | AR-620DF | 10 | |
| | | SPF take-up roller x 1 | | | | | | |
| | | SPF reverse roller x 1 | | | | | | |
| 10 | Paper feed roller kit | Main unit paper feed roller x 1 | 100K | 100K | 100K | AR-620RT | 10 | |
| | | Main unit paper feed take-up roller x 1 | | | | | | |
| | | Main unit paper feed reverse roller x 1 | | | | | | |

| No. | Name | Content | Life | | | Model name | Packing | Remark |
|-----|------------------|----------------------------|--------------------|--------------------|--------------------|------------|---------|---|
| | | | 55cpm | 62cpm | 70cpm | | | |
| 11 | Staple cartridge | Finisher staple x 3 | 5,000 times x 3 | 5,000 times x 3 | 5,000 times x 3 | SF-SC11 | 20 | Cartridge for AR-F15 (Common with the cartridge for AR-F11/ F12) |
| 12 | Staple cartridge | Saddle finisher staple x 3 | 2,000 times x 3 | 2,000 times x 3 | 2,000 times x 3 | AR-SC3 | 40 | Cartridge for AR-F16 (Common with the cartridge for AR-F12) |

B. Europe affiliates (Including East Europe, Russia) Australia/New Zealand/UK

| No. | Part name | Content | Life | | | Model name | Packing | Remark |
|-----|---------------------------------------|---|--------------------|--------------------|--------------------|------------|---------|---|
| | | | 55cpm | 62cpm | 70cpm | | | |
| 1 | Maintenance kit 1 | Side seal F x 1 | 250K | 300K | 300K | AR-620KA | 10 | |
| | | Side seal R x 1 | | | | | | |
| | | MC cleaning unit x 1 | | | | | | |
| | | Cleaner blade x 1 | | | | | | |
| | | Drum separation pawl x 4 | | | | | | |
| | | Screen grid x 1 | | | | | | |
| | | Toner reception seal x 1 | | | | | | |
| | | Charging plate x 1 | | | | | | |
| | | Paper dust removal unit x 1 | | | | | | |
| | | DV seal x 1 | | | | | | |
| | | DV side seal F x 1 | | | | | | |
| | | DV side seal R x 1 | | | | | | |
| | | Toner filter x 1 | | | | | | |
| 2 | Maintenance kit 2 | Transfer cleaning roller x 1 | 250K | 300K | 300K | AR-620KB | 10 | |
| | | Transfer belt x 1 | | | | | | |
| | | Transfer roller x 1 | | | | | | |
| | | Transfer gear x 1 | | | | | | |
| 3 | Maintenance kit 3 (55/62cpm model) | Upper heat roller x 1 | 250K | 300K | — | AR-620KC | 5 | |
| | | Lower heat roller x 1 | | | | | | |
| | | Fusing separation pawl (Upper) x 6 | | | | | | |
| | | Fusing separation pawl (lower) x 4 | | | | | | |
| | | Scraper unit x 1 | | | | | | |
| | | Sub heat roller cleaning unit x 1 | | | | | | |
| | | Sub heat roller x 1 | | | | | | |
| | | Heat roller bearing x 2 | | | | | | |
| | Maintenance kit 3 (70cpm model) | Upper heat roller x 1 | — | — | 300K | AR-700KC | 5 | |
| | | Lower heat roller x 1 | | | | | | |
| | | Fusing separation pawl (Upper) x 6 | | | | | | |
| | | Fusing separation pawl (lower) x 4 | | | | | | |
| 4 | DSPF roller kit | Cleaning sheet x 1 | 100K | 100K | 100K | AR-620DF | 10 | |
| | | Oil roller x 1 | | | | | | |
| | | Cleaning roller bearing x 2 | | | | | | |
| | | Pressure cleaning plate x 1 | | | | | | |
| 5 | Paper feed roller kit | Sub heat roller x 1 | 100K | 100K | 100K | AR-620RT | 10 | |
| | | Heat roller bearing x 2 | | | | | | |
| | | Main unit paper feed roller x 1 | | | | | | |
| | | Main unit paper feed take-up roller x 1 | | | | | | |
| 6 | Staple cartridge | Main unit paper feed reverse roller x 1 | 100K | 100K | 100K | AR-620RT | 10 | |
| | | Finisher staple x 3 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| 7 | Staple cartridge | Saddle finisher staple x 3 | 2,000 times x 3 | 2,000 times x 3 | 2,000 times x 3 | AR-SC3 | 40 | Cartridge for AR-F16 (Common with the cartridge for AR-F12) |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

C. Middle East/Asia/South and Central America

| No. | Part name | Content | Life | | | Model name | Packing | Remark |
|-----|---------------------------------------|--|--------------------|--------------------|--------------------|------------|---------|---|
| | | | 55cpm | 62cpm | 70cpm | | | |
| 1 | Maintenance kit 1 | Side seal F x 1 Side seal R x 1 MC cleaning unit x 1 Cleaner blade x 1 Drum separation pawl x 4 Screen grid x 1 Toner reception seal x 1 Charging plate x 1 Paper dust removal unit x 1 DV seal x 1 DV side seal F x 1 DV side seal R x 1 Toner filter x 1 | 250K | 300K | 300K | AR-620KA | 10 | |
| 2 | Maintenance kit 2 | Transfer cleaning roller x 1 Transfer belt x 1 Transfer roller x 1 Transfer gear x 1 | 250K | 300K | 300K | AR-620KB | 10 | |
| 3 | Maintenance kit 3 (55/62cpm model) | Upper heat roller x 1 Lower heat roller x 1 Fusing separation pawl (Upper) x 6 Fusing separation pawl (lower) x 4 Scraper unit x 1 Sub heat roller cleaning unit x 1 Sub heat roller x 1 Heat roller bearing x 2 | 250K | 300K | — | AR-620KC | 5 | |
| | Maintenance kit 3 (70cpm model) | Upper heat roller x 1 Lower heat roller x 1 Fusing separation pawl (Upper) x 6 Fusing separation pawl (lower) x 4 Cleaning sheet x 1 Oil roller x 1 Cleaning roller bearing x 2 Pressure cleaning plate x 1 Sub heat roller x 1 Heat roller bearing x 2 | — | — | 300K | AR-700KC | 5 | |
| 4 | DSPF roller kit | SPF paper feed roller x 1 SPF take-up roller x 1 SPF reverse roller x 1 | 100K | 100K | 100K | AR-620DF | 10 | |
| 5 | Paper feed roller kit | Main unit paper feed roller x 1 Main unit paper feed take-up roller x 1 Main unit paper feed reverse roller x 1 | 100K | 100K | 100K | AR-620RT | 10 | |
| 6 | Staple cartridge | Finisher staple x 3 | 5,000 times x 3 | 5,000 times x 3 | 5,000 times x 3 | SF-SC11 | 20 | Cartridge for AR-F15 (Common with the cartridge for AR-F11/ F12) |
| 7 | Staple cartridge | Saddle finisher staple x 3 | 2,000 times x 3 | 2,000 times x 3 | 2,000 times x 3 | AR-SC3 | 40 | Cartridge for AR-F16 (Common with the cartridge for AR-F12) |

D. China

| No. | Part name | Content | Life | | Model name | Packing | Packing |
|-----|---------------------------------------|--|--------------------|--------------------|------------|---------|---|
| | | | 62cpm | 70cpm | | | |
| 1 | Maintenance kit 1 | Side seal F x 1 Side seal R x 1 MC cleaning unit x 1 Cleaner blade x 1 Drum separation pawl x 4 Screen grid x 1 Toner reception seal x 1 Charging plate x 1 Paper dust removal unit x 1 DV seal x 1 DV side seal F x 1 DV side seal R x 1 Toner filter x 1 | 300K | 300K | AR-620KA | 10 | |
| 2 | Maintenance kit 2 | Transfer cleaning roller x 1 Transfer belt x 1 Transfer roller x 1 Transfer gear x 1 | 300K | 300K | AR-620KB | 10 | |
| 3 | Maintenance kit 3 (55/62cpm model) | Upper heat roller x 1 Lower heat roller x 1 Fusing separation pawl (Upper) x 6 Fusing separation pawl (lower) x 4 Scraper unit x 1 Sub heat roller cleaning unit x 1 Heat roller bearing x 2 | 300K | — | AR-620KC | 5 | |
| | Maintenance kit 3 (70cpm model) | Upper heat roller x 1 Lower heat roller x 1 Fusing separation pawl (Upper) x 6 Fusing separation pawl (lower) x 4 Heat seal plate N assembly x 1 Oil roller x 1 Cleaning roller bearing x 2 Pressure cleaning plate x 1 Sub heat roller x 1 Heat roller bearing x 2 | — | 300K | AR-700KC | 5 | |
| 4 | DSPF roller kit | SPF paper feed roller x 1 SPF take-up roller x 1 SPF reverse roller x 1 | 100K | 100K | AR-620DF | 10 | |
| 5 | Paper feed roller kit | Main unit paper feed roller x 1 Main unit paper feed take-up roller x 1 Main unit paper feed reverse roller x 1 | 100K | 100K | AR-620RT | 10 | |
| 6 | Staple cartridge | Finisher staple x 3 | 5,000 times x 3 | 5,000 times x 3 | SF-SC11 | 20 | Cartridge for AR-F15 (Common with the cartridge for AR-F11/F12) |
| 7 | Staple cartridge | Saddle finisher staple x 3 | 2,000 times x 3 | 2,000 times x 3 | AR-SC3 | 40 | Cartridge for AR-F16 (Common with the cartridge for AR-F12) |

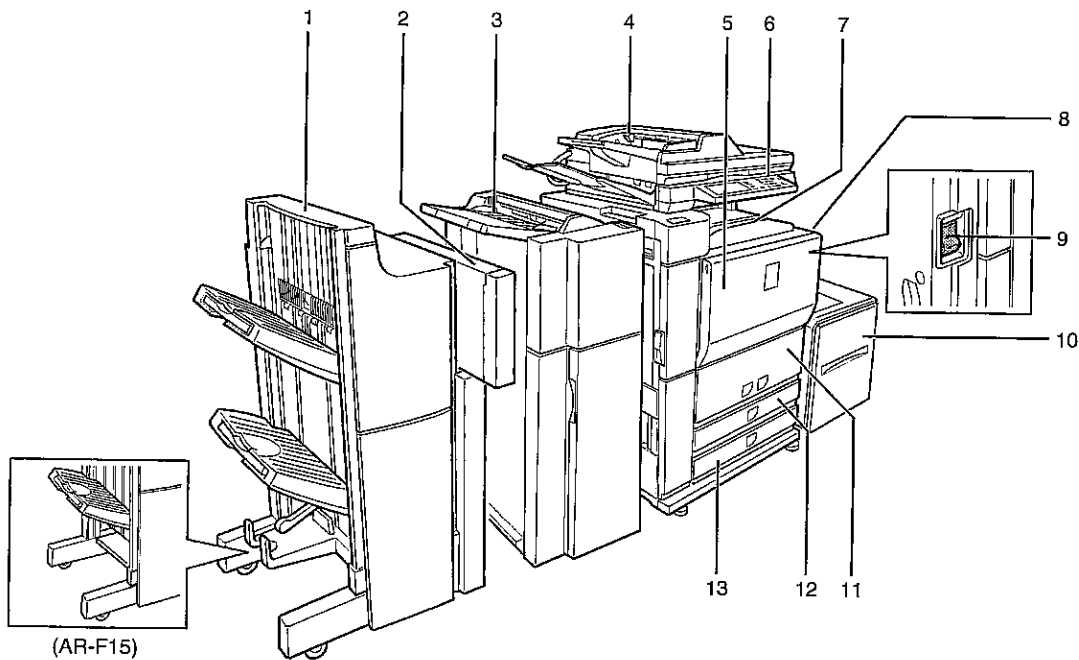
E. Taiwan

| No. | Part name | Content | Life | | | Model name | Packing | Packing |
|-----|---------------------------------------|--|--------------------|--------------------|--------------------|------------|---------|---|
| | | | 55cpm | 62cpm | 70cpm | | | |
| 1 | Maintenance kit 1 | Side seal F x 1 Side seal R x 1 MC cleaning unit x 1 Cleaner blade x 1 Drum separation pawl x 4 Screen grid x 1 Toner reception seal x 1 Charging plate x 1 Paper dust removal unit x 1 DV seal x 1 DV side seal F x 1 DV side seal R x 1 Toner filter x 1 | 250K | 300K | 300K | AR-620KA | 10 | |
| 2 | Maintenance kit 2 | Transfer cleaning roller x 1 Transfer belt x 1 Transfer roller x 1 Transfer gear x 1 | 250K | 300K | 300K | AR-620KB | 10 | |
| 3 | Maintenance kit 3 (55/62cpm model) | Upper heat roller x 1 Lower heat roller x 1 Fusing separation pawl (Upper) x 6 Fusing separation pawl (lower) x 4 Scraper unit x 1 Sub heat roller cleaning unit x 1 Heat roller bearing x 2 | 250K | 300K | — | AR-620KC | 5 | |
| | Maintenance kit 3 (70cpm model) | Upper heat roller x 1 Lower heat roller x 1 Fusing separation pawl (Upper) x 6 Fusing separation pawl (lower) x 4 Cleaning sheet x 1 Oil roller x 1 Cleaning roller bearing x 2 Pressure cleaning plate x 1 Sub heat roller x 1 Heat roller bearing x 2 | — | — | 300K | AR-700KC | 5 | |
| 4 | DSPF roller kit | SPF paper feed roller x 1 SPF take-up roller x 1 SPF reverse roller x 1 | 100K | 100K | 100K | AR-620DF | 10 | |
| 5 | Paper feed roller kit | Main unit paper feed roller x 1 Main unit paper feed take-up roller x 1 Main unit paper feed reverse roller x 1 | 100K | 100K | 100K | AR-620RT | 10 | |
| 6 | Staple cartridge | Finisher staple x 3 | 5,000 times x 3 | 5,000 times x 3 | 5,000 times x 3 | SF-SC11 | 20 | Cartridge for AR-F15 (Common with the cartridge for AR- F11/F12) |
| 7 | Staple cartridge | Saddle finisher staple x 3 | 2,000 times x 3 | 2,000 times x 3 | 2,000 times x 3 | AR-SC3 | 40 | Cartridge for AR-F16 (Common with the cartridge for AR- F12) |

[5] EXTERNAL VIEW AND INTERNAL STRUCTURE

1. External view and operation parts

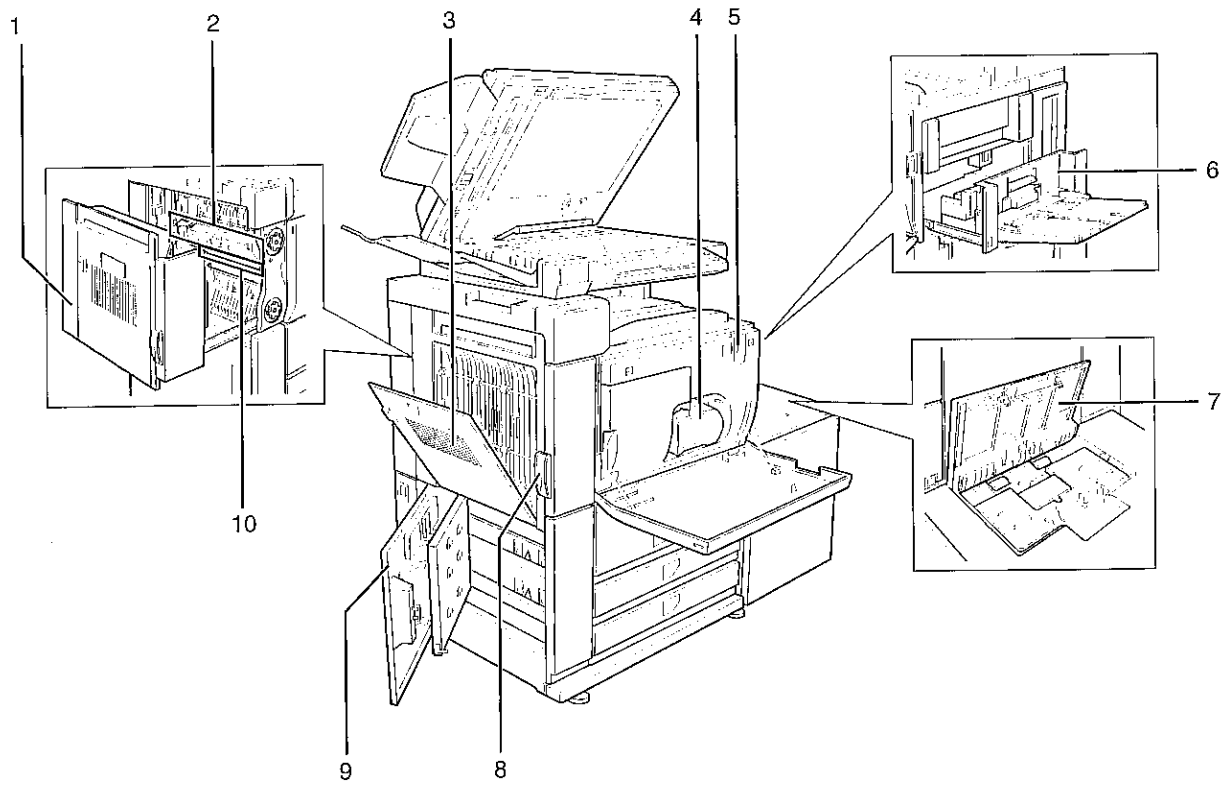
A. External view and external operation parts



| No. | Name | Parts | Function/Operation | Note |
|-----|--|-------|---|------|
| 1 | Saddle stitch finisher (AR-F16) *1 / Finisher (AR-F15) *1 | | The finisher and the saddle stitch finisher include the offset function, which offsets each set of copies from the preceding set for easy separation. Each set of sorted copies can also be stapled. The saddle stitch finisher can automatically staple at the center line of a set of copies and fold the pages to create a pamphlet. A punch unit can be installed to add punch holes to copiooes, and an inserter can be installed to insert blank pages at specified pages. | |
| 2 | Punch module (AR-PN4A) *1 | | Adds punch holes to printed pages. | |
| 3 | Inserter (AR-CF2) *1 | | The inserter enables blank sheets or printed sheets to be added to copy and print output as covers or inserts without printing. Printed output can also be fed one set at a time from the inserter for stapling or punching without performing stapling or staple sorting finishing. | |
| 4 | Automatic document feeder | | This automatically feeds and scans multiple sheet originals. Both sides of two-sided originals can be scanned at once. | |
| 5 | Front cover | | Open to replace toner cartridge. | |
| 6 | Operation panel | | Performs various setting, display, and simulation operations. | |
| 7 | Center tray | | Finished sheets are deposited here | |
| 8 | Bypass tray | | Special papers (including transparency film) and copy paper can be fed from the bypass tray. | |
| 9 | Power switch | | Turns the power on and off. If the power does not come on when the power switch is turned on, check the main power switch to see if it is turned on. | |
| 10 | Paper feed tray 5 (Large capacity tray (AR-LC6)) *1 | | The large capacity tray can hold up to 3,500 sheets of commonly used (8-1/2" x 11", B5, A4) SHARP standard paper (20 lbs. (80 g/m²)). | |
| 11 | Paper feed trays 1, 2 | | The trays hold paper. Approximately 800 sheets of standard 8-1/2" x 11" or A4 size paper (20 lbs. (80 g/m²)) can be loaded in tray 1, and approximately 1200 sheets of standard 8-1/2" x 11", A4 or B5 size paper (20 lbs. (80 g/m²)) can be loaded in tray 2. | |
| 12 | Paper feed tray 3 | | Tray 3 holds paper. Approximately 500 sheets of standard (20 lbs. (80 g/m²)) paper can be loaded in this tray. Tabbed paper and transparencies can also be loaded. | |
| 13 | Paper feed tray 4 | | Tray 4 holds paper. Approximately 500 sheets of standard (20 lbs. (80 g/m²)) paper can be loaded in this tray. | |

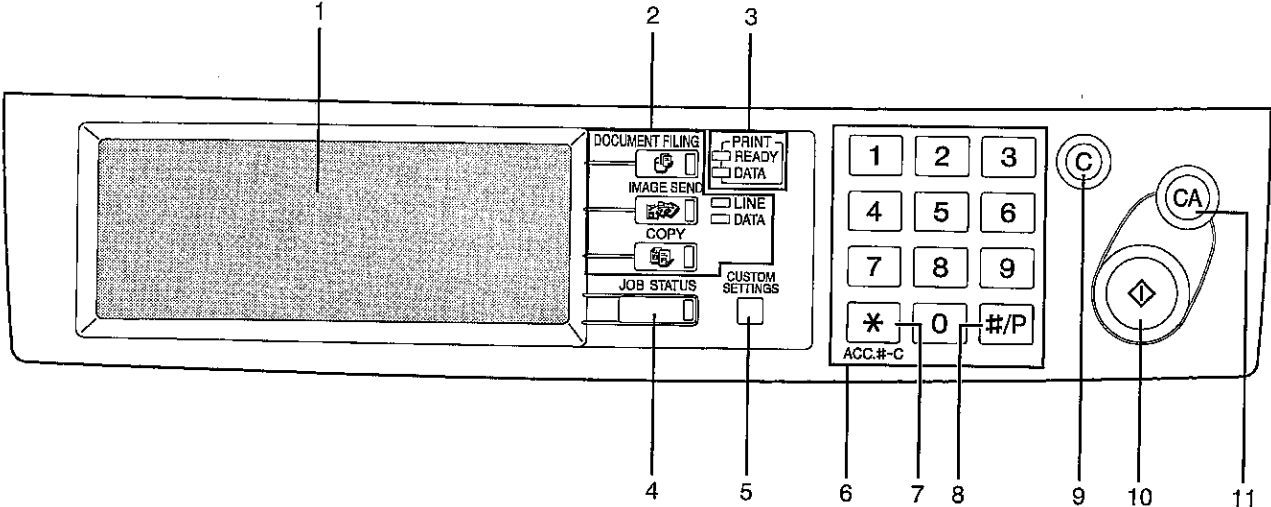
*1: 1, 2, 3 and are peripheral devices. For information on these devices, see the explanations of the devices in the manual.

B. Internal operation parts



| No. | Parts | | Note |
|-----|------------------------------------|--|---|
| | Name | Function/Operation | |
| 1 | Duplex unit | Open this cover to remove a misfeed from the fusing unit area. | The fusing unit is hot. Take care in removing misfed paper. |
| 2 | Fusing unit | Toner images are fused here. | |
| 3 | Cover of the duplex unit | Open when a misfeed has occurred in duplex unit. | |
| 4 | Toner cartridge | The toner cartridge must be replaced when indicated on the operation panel. | |
| 5 | Main power switch | Keep this switch turned on when the fax option or network scanner option is installed. | |
| 6 | Right side cover | Open when a misfeed has occurred in bypass tray or large capacity tray. | |
| 7 | Upper cover of large capacity tray | Open when a misfeed has occurred in large capacity tray. | |
| 8 | Left side cover release | Push this knob up to open the left side cover. | |
| 9 | Left cover of paper drawer | Open this cover to remove paper misfed in the tray 3 and tray 4. | |
| 10 | Photoconductive drum | Images are formed on the photoconductive drum. | Do not touch or damage the photoconductive drum. |

C. Operation, display parts



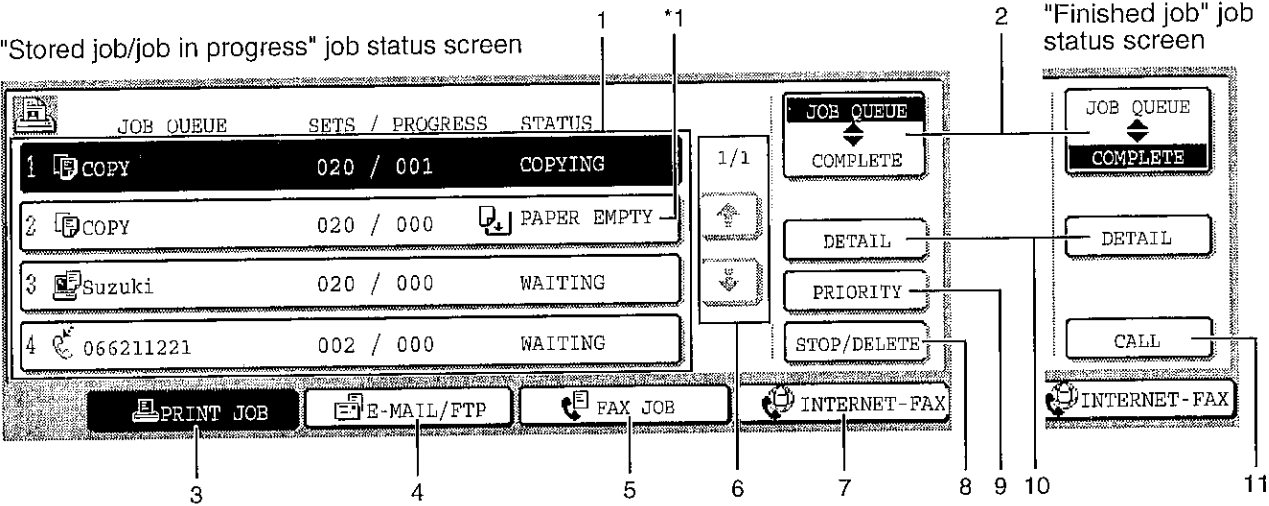
| No. | Parts | | Note |
|-----|---|--|------|
| | Name | Function/Operation | |
| 1 | Touch panel | The machine status, messages and touch keys are displayed on the panel. The document filing, copy, network scanner*1, and fax*2 functions are used by switching to the screen for the desired function. | |
| 2 | Mode select keys and indicators | Use to change modes and the corresponding display on the touch panel. [DOCUMENT FILING] key Press to select the document filing mode. [IMAGE SEND] key/LINE indicator/DATA indicator Press to enter the network scan mode when the network scanner function is added. [COPY] key Press to select the copy mode. | |
| 3 | [PRINT] key/READY indicator/ DATA indicator | Press to enter the print mode. READY indicator Print data can be received when this indicator is lit. DATA indicator Lights up or blinks when print data is being received. Also lights up or blinks when printing is being performed. | |
| 4 | [JOB STATUS] key | Press to display the current job status. | |
| 5 | [CUSTOM SETTINGS] key | This is used to store, edit, and delete user names and folder names for the document filing function, and to configure the key operator programs and printer configuration settings. | |
| 6 | Numeric keys | Use to enter number values for various settings. | |
| 7 | [] key ([ACC.#-C] key) | This key is used in copy mode, document filing mode, network scanner mode*1, and fax mode*2. | |
| 8 | [#/P] key | This is used as a program key when using the copy function, and to dial when using the fax function*2. | |
| 9 | [C] key | This key is used in copy mode, document filing mode, network scanner mode*1, and fax mode*2. | |
| 10 | [START] key | Use this key to start copying in copy mode, scan a document in network scanner mode*1, or scan a document for transmission in fax mode*2. | |
| 11 | [CA] key | This key is used in copy mode, document filing mode, network scanner mode*1, and fax mode*2. Use the key to cancel settings and perform an operation from the initial machine state. | |

*1: When the network scanner option is installed.

*2: When the fax option is installed.

D. Job status screen (common to print, copy, network scan and internet fax)

This screen is displayed when the [JOB STATUS] key on the operation panel is pressed.
A job list showing the current job at the top of the job queue or a list showing completed jobs can be displayed.
The contents of jobs can be viewed or jobs can be deleted from the queue.

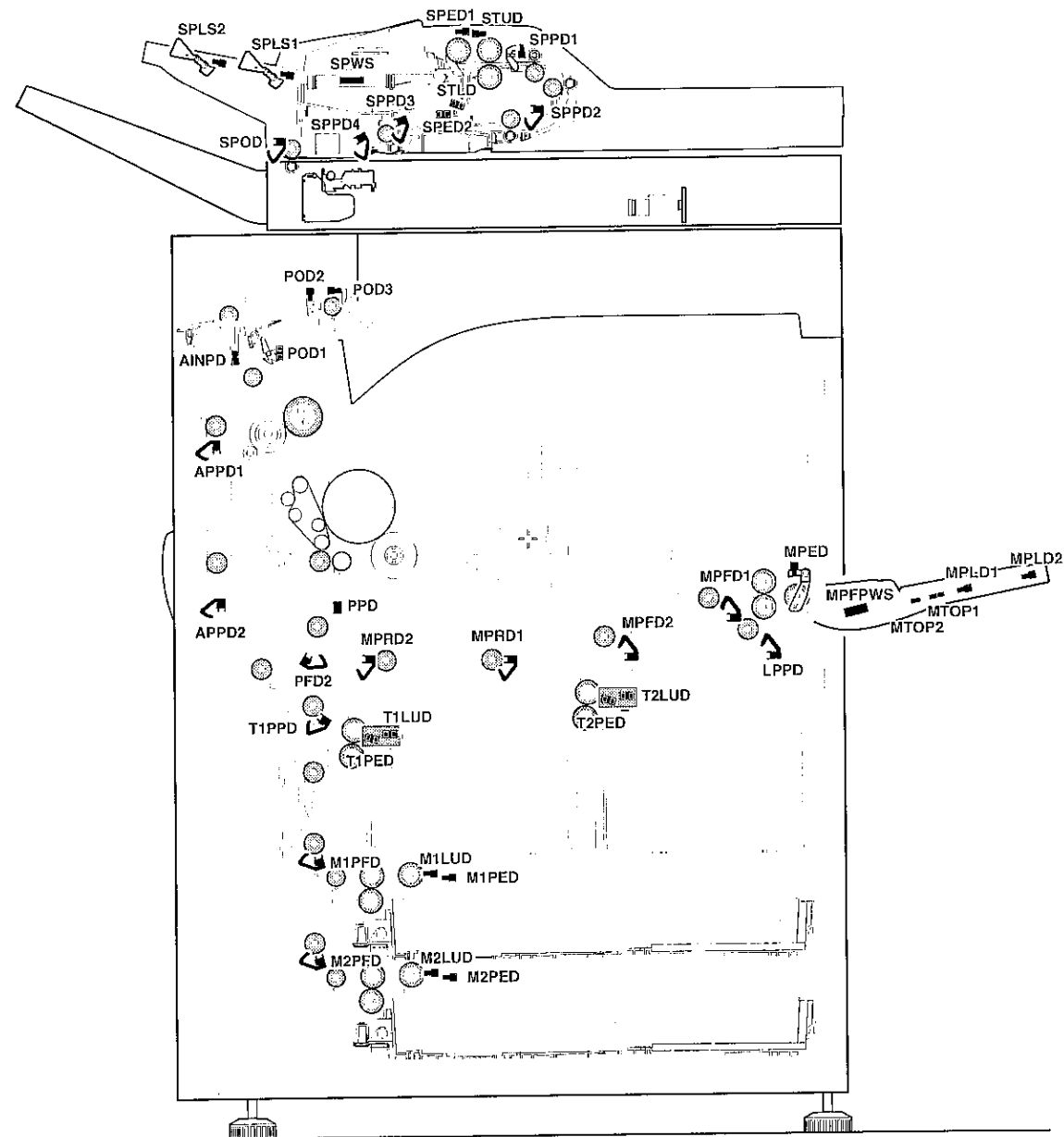


| No. | (Displayed in the touch panel) | | Note |
|-----|--------------------------------|--|---|
| | Name | Function/Operation | |
| 1 | Job list | <p>The displayed jobs in the job list are themselves operation keys. To cancel printing or to give a job the highest print priority, touch the relevant job key to select the job and execute the desired operation using the keys described in 8 and 9.</p> <p>This shows the current job and the jobs waiting to be run. The icons to the left of the jobs in the queue show the job mode. The document filing reprint job icon is highlighted.</p> <p>Note that the icon does not become highlighted during retransmission of a fax/image transmission job.</p> <div><div> Print mode</div><div> Copy mode</div></div> <p>E-MAIL/FTP mode:</p> <div><div> Scan to e-mail job</div><div> Scan to FTP job</div></div> <div> Scan to Sharpdesk job</div> <p>Fax mode:</p> <div><div> Fax send job</div><div> Fax reception job</div></div> <div><div> PC-FAX send job</div></div> <p>Internet Fax mode</p> <div><div> i-Fax send job</div><div> i-Fax reception job</div></div> <div> PC-Internet Fax send job</div> | <p>*1: "PAPER EMPTY" in the job status display</p> <p>When a job status display indicates "PAPER EMPTY", the specified paper size for the job is not loaded in any of the trays.</p> <p>In this case, the job will be suspended until the required paper is loaded. Other stored jobs will be printed (if possible) until the required paper is loaded.</p> <p>(Other jobs will not be printed if the paper runs out during printing.) If you need to change the paper size because the specified paper size is not available, touch the current job key to select it and then touch the [DETAIL] key described in 9.</p> |
| 2 | Mode select key | <p>This switches the job list display between "JOB QUEUE" and "COMPLETE".</p> <p>"JOB QUEUE": Shows stored jobs and the job in progress.</p> <p>"COMPLETE": Shows finished jobs.</p> <p>Files saved in the automatic temporary save folder by the document filing function and finished broadcast transmission jobs appear as keys in the finished job screen. An automatic temporary save file in the finished job screen or the [Filing] key can be touched, followed by the [CALL] key, to call up a finished job and print or transmit it. A finished broadcast transmission job key can be touched followed by the [DETAIL] key to check the result of the transmission.</p> | |
| 3 | [PRINT JOB] key | <p>This displays the print job list of print mode (copying, printing, fax reception, Internet fax reception, and self printing).</p> | |

| No. | (Displayed in the touch panel) | | Note |
|-----|--------------------------------|--|------|
| | Name | Function/Operation | |
| 4 | [E-MAIL/FTP] key | This displays the transmission status and finished jobs of scan mode (Scan to e-mail, Scan to FTP, and Scan to SharpDesk) when the network scanner option is installed. | |
| 5 | [FAX JOB] key | This displays the transmission/reception status and finished jobs of fax mode (fax and PC-Fax) when the fax option is installed. | |
| 6 | Display switching keys | Use to switch the page of the displayed job list. | |
| 7 | [INTERNET-FAX] key | This displays the transmission/reception status and finished jobs of Internet fax mode and PC Internet fax mode when the network scanner option is installed. | |
| 8 | [STOP/DELETE] key | Use to cancel or delete the current job or delete the selected reserved job. Note that printing of received faxes and received Internet faxes cannot be canceled or deleted. | |
| 9 | [PRIORITY] key | A stored job in the "JOB QUEUE" job list can be printed ahead of all other stored jobs by selecting the job and then touching this key. | |
| 10 | [DETAIL] key | This shows detailed information on the selected job. Files saved in the automatic temporary save folder by the document filing function and finished broadcast transmission jobs appear as keys in the finished job screen. An automatic temporary save file in the finished job screen or the [Filing] key can be touched, followed by the [CALL] key, to call up a finished job and print or transmit it. A finished broadcast transmission job key can be touched followed by the [DETAIL] key to check the result of the transmission. | |
| 11 | [CALL] key | When this key is touched after selecting a temporarily stored job in the finished job screen, the "JOB SETTINGS" menu screen appears to let you resend or reprint the finished job. | |

2. Function parts

A. Sensor/detector



| Code | Signal name | Name | Function/Operation | Type | Connector level | | PWB name | Note |
|-------|-------------|---|---|-------------------|-----------------|-----------------------|----------|-------------------------------|
| | | | | | "L" | "H" | | |
| AINPD | AINPD | Duplex (ADU) paper entry detector | Duplex (ADU) paper entry detection, detection of paper exit to finisher | Transmission type | Paper pass | - | PCU PWB | Paper transport system sensor |
| APPD1 | APPD1 | Duplex (ADU) paper pass detector 1 | Duplex (ADU) upstream paper pass detection | Transmission type | Paper pass | - | PCU PWB | Paper transport system sensor |
| APPD2 | APPD2 | Duplex (ADU) paper pass detector 2 | Duplex (ADU) midstream paper pass detection | Transmission type | Paper pass | - | PCU PWB | Paper transport system sensor |
| LPPD | LPPD | LCC paper pass detector | Detection of paper entry from LCC | Transmission type | Paper pass | | PCU PWB | Paper transport system sensor |
| M1LUD | M1LUD | Paper tray upper limit detector (Paper feed tray 3) | Paper tray upper limit detection (Paper feed tray 3) | Transmission type | - | Upper limit detection | PCU PWB | Paper feed tray system sensor |
| M1PED | M1PED | Paper empty detector (Paper feed tray 3) | Paper empty detection (Paper feed tray 3) | Transmission type | Paper empty | Paper present | PCU PWB | Paper feed tray system sensor |
| M1PFD | M1PFD | Paper pass detector (Paper feed tray 3) | Paper feed tray 3 paper pass detection | Transmission type | Paper pass | - | PCU PWB | Paper transport system sensor |
| M2LUD | M2LUD | Paper tray upper limit detector (Paper feed tray 4) | Paper tray upper limit detection (Paper feed tray 4) | Transmission type | - | Upper limit detection | PCU PWB | Paper feed tray system sensor |
| M2PED | M2PED | Paper empty detector (Paper feed tray 4) | Paper empty detection (Paper feed tray 4) | Transmission type | Paper empty | Paper present | PCU PWB | Paper feed tray system sensor |

▲

▲

▲

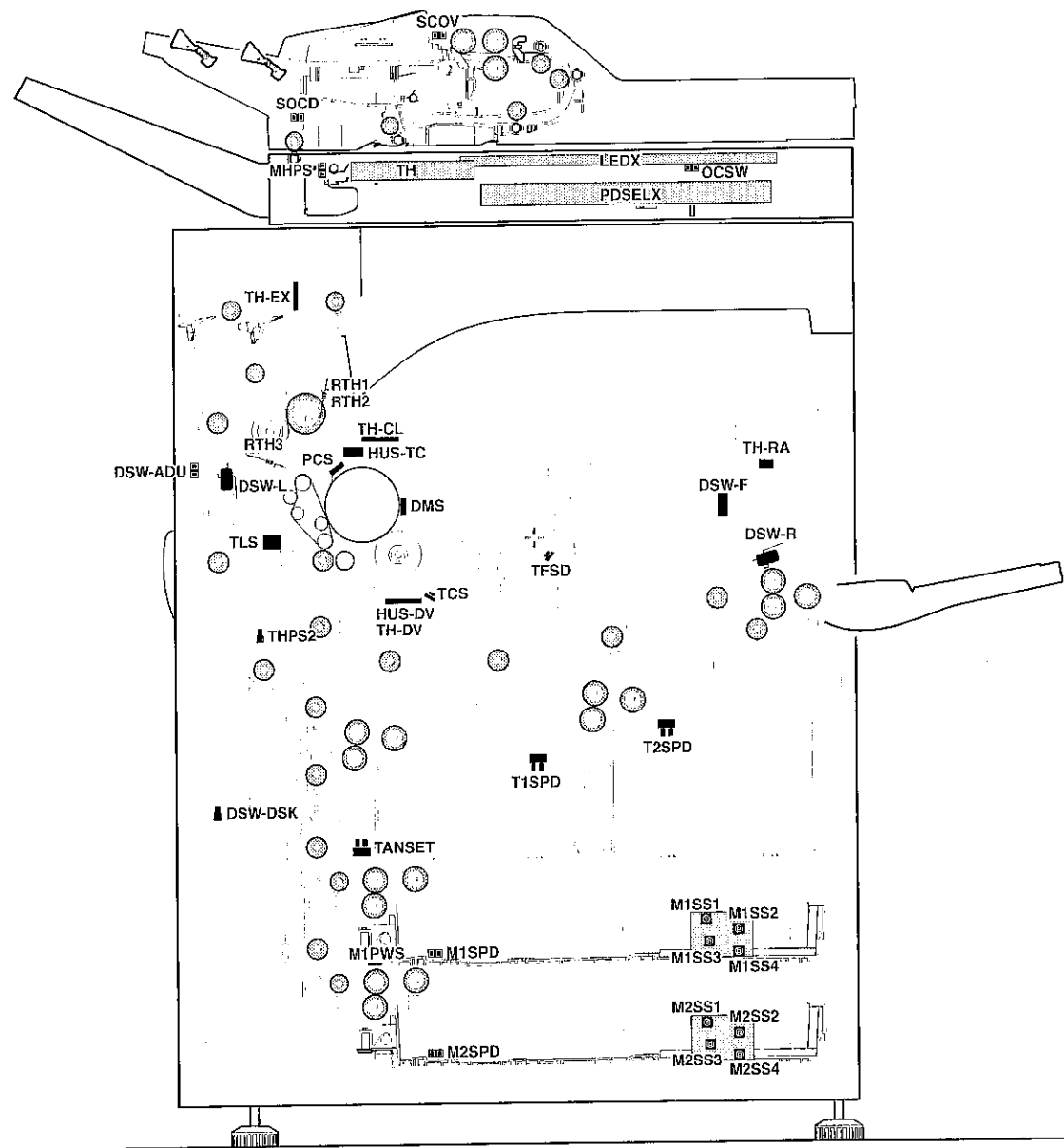
▲

▲

▲

▲

| Code | Signal name | Name | Function/Operation | Type | Connector level | | PWB name | Note |
|--------|-------------|--|---|-------------------|-----------------|-----------------------------|----------|-------------------------------|
| | | | | | "L" | "H" | | |
| M2PFD | M2PFD | Paper pass detector (Paper feed tray 4) | Paper feed tray 4 paper pass detection | Transmission type | Paper pass | - | PCU PWB | Paper transport system sensor |
| MPED | MPED | Manual feed paper empty detector | Manual paper feed tray paper empty detection | Transmission type | Paper present | Paper empty | PCU PWB | Manual paper feed unit |
| MPFD1 | MPFD1 | Manual feed paper pass detector 1 | Manual tray paper pass detection | Transmission type | Paper pass | - | PCU PWB | Paper transport system sensor |
| MPFD2 | MPFD2 | Manual feed paper pass detector 2 | Manual tray and LCC paper pass detection | Transmission type | Paper pass | - | PCU PWB | Paper transport system sensor |
| MPFPWS | MPFPWS | Manual feed paper width detector | Manual feed paper width detection | Volume resistor | - | - | PCU PWB | Analog detector |
| MPLD1 | MPLD1 | Manual feed paper length detector 1 | Manual paper feed tray paper length detection (Paper feed side) | Transmission type | - | Paper present | PCU PWB | Manual paper feed unit |
| MPLD2 | MPLD2 | Manual feed paper length detector 2 | Manual paper feed tray paper length detection (Outside) | Transmission type | - | Paper present | PCU PWB | Manual paper feed unit |
| MPRD1 | MPRD1 | Paper feed tray 2 paper pass detector 1 | Manual feed/paper feed tray 2/LCC paper pass detection | Transmission type | Paper pass | - | PCU PWB | Paper transport system sensor |
| MPRD2 | MPRD2 | Paper feed tray 2 paper pass detector 2 | Manual feed/paper feed tray 2/LCC paper pass detection | Transmission type | Paper pass | - | PCU PWB | Paper transport system sensor |
| MTOP1 | MTOP1 | Manual tray pull-out position detector 1 | Manual paper feed tray pull-out position detection (Storing position) | Contact type | Storage | - | PCU PWB | Manual paper feed unit |
| MTOP2 | MTOP2 | Manual tray pull-out position detector 2 | Manual paper feed tray pull-out position detection (Pull-out position) | Contact type | Pull-out | - | PCU PWB | Manual paper feed unit |
| PFD2 | PFD2 | Paper pass detector 2 | Paper pass detection (Left door unit) from duplex (ADU)/No.1, 3, 4 paper feed | Transmission type | Paper pass | - | PCU PWB | Paper transport system sensor |
| POD1 | POD1 | Paper exit detector 1 | Paper exit detection from fusing | Transmission type | Paper pass | - | PCU PWB | Paper transport system sensor |
| POD2 | POD2 | Paper exit detector 2 | Paper pass detection from paper exit | Transmission type | Paper pass | - | PCU PWB | Paper transport system sensor |
| POD3 | POD3 | Paper exit detector 3 | Paper exit detection to upper section paper exit tray (Full detection) | Transmission type | - | Paper pass (Full detection) | PCU PWB | Paper transport system sensor |
| PPD | PPD | Resist roller front paper pass detector | Paper pass detection in front of resist roller | Reflection type | Paper pass | - | PCU PWB | Paper transport system sensor |
| SPED1 | SPED1 | SPF document empty detector | SPF document empty detection | Transmission type | Paper present | | SCN PWB | Sensor |
| SPED2 | SPED2 | SPF document detector | SPF document detection | Transmission type | Paper present | | SCN PWB | Sensor |
| SPLS1 | SPLS1 | SPF document length detector 1 | SPF document length detection (Short) | Transmission type | | Paper present | SCN PWB | Sensor |
| SPLS2 | SPLS2 | SPF document length detector 2 | SPF document length detection (Long) | Transmission type | | Paper present | SCN PWB | Sensor |
| SPOD | SPOD | SPF paper exit detector | SPF paper exit detection | Transmission type | Paper exit | | SCN PWB | Sensor |
| SPPD1 | SPPD1 | SPF document paper pass detector 1 | SPF document paper pass detection 1 | Transmission type | Paper present | | SCN PWB | Sensor |
| SPPD2 | SPPD2 | SPF document paper pass detector 2 | SPF document paper pass detection 2 | Transmission type | Paper present | | SCN PWB | Sensor |
| SPPD3 | SPPD3 | SPF document paper pass detector 3 | SPF document paper pass detection 3 | Transmission type | Paper present | | SCN PWB | Sensor |
| SPPD4 | SPPD4 | SPF document paper pass detector 4 | SPF document paper pass detection 4 | Transmission type | Paper present | | SCN PWB | Sensor |
| SPWS | SPWS | SPF document size (Width) detection analog data detector | SPF document size (Width) detection | Volume resistor | - | - | SCN PWB | Other detector |
| STLD | STLD | SPF document tray lower limit detector | SPF document tray lower limit detection | Transmission type | | Lower limit | SCN PWB | Sensor |
| STUD | STUD | SPF document tray upper limit detector | SPF document tray upper limit detection | Transmission type | | Upper limit | SCN PWB | Sensor |
| T1LUD | T1LUD | Paper feed tray upper limit detector (Paper feed tray 1) | Paper feed tray upper limit (Paper feed tray 1) | Transmission type | Upper limit | - | PCU PWB | Paper feed tray system sensor |
| T1PED | T1PED | Paper empty detector (Paper feed tray 1) | Paper presence detection (Paper feed tray 1) | Transmission type | Paper empty | Paper present | PCU PWB | Paper feed tray system sensor |
| T1PPD | T1PPD | Paper pass detector (Paper feed tray 1) | Paper pass detection from paper feed tray 1 | Transmission type | Paper pass | - | PCU PWB | Paper transport system sensor |
| T2LUD | T2LUD | Paper feed tray upper limit detector (Paper feed tray 2) | Paper feed tray upper limit (Paper feed tray 2) | Transmission type | Upper limit | - | PCU PWB | Paper feed tray system sensor |
| T2PED | T2PED | Paper empty detector (Paper feed tray 2) | Paper presence detection (Paper feed tray 2) | Transmission type | Paper empty | Paper present | PCU PWB | Paper feed tray system sensor |

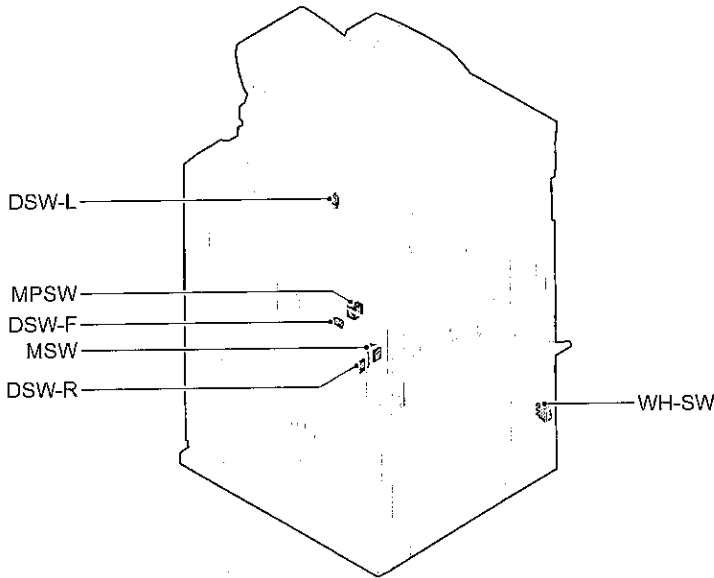


| Code | Signal name | Name | Function/Operation | Type | Connector level | | PWB name | Note |
|---------|-------------|--|---|-------------------|---|---|----------|----------------------------|
| | | | | | "L" | "H" | | |
| CISTH | CISTH | CIS temperature sensor | CIS temperature detection | Thermistor | - | - | SCN PWB | Not used. |
| DMS | DMS | OPC drum marking sensor | OPC drum mark detection | Reflection type | - | - | PCU PWB | Analog detector |
| DSW-ADU | DSW-ADU | Duplex (ADU) cover open/close detector | Duplex (ADU) cover open/close detection | Transmission type | Duplex (ADU) door open | Duplex (ADU) door open close | PCU PWB | Door switch |
| DSW-DSK | DSW-DSK | Left door open/close detector (Desk section) | Left door open/close detection (Desk section) | Transmission type | Desk left door open | Desk left door close | PCU PWB | Door switch |
| DSW-F | DSW-F | Front door open/close detector | Front door open/close detection | Micro switch | Front door and left door open | Front door and left door open | PCU PWB | Door switch |
| DSW-L | DSW-L | Left door open/close detector | Left door open/close detection | Micro switch | Left door, front door open, manual paper feed unit pull-out | Left door, front door close, manual paper feed unit close | PCU PWB | Door switch |
| DSW-R | DSW-R | Manual feed open/close detector | Manual feed open/close detection | Micro switch (NC) | Left door open or manual unit pulled out | Manual unit insertion | PCU PWB | Door switch |
| HUS-DV | HUS-DV | Developing humidity sensor | Developing section peripheral humidity detection | Humidity sensor | - | - | PCU PWB | Analog detector |
| HUS-TC | HUS-TC | Process humidity sensor | Process section peripheral humidity detection | Humidity sensor | - | - | PCU PWB | Analog detector (Not used) |
| LEDX | LEDX | Document size sensor (Light emitting) (LED) | Document size detection LED | LED | - | - | SCN PWB | Other detector |
| M1PWS | M1PWS | Paper feed tray paper width detector (Paper feed tray 3) | Multi paper feed tray paper width detection (Paper feed tray 3) | Slide resistor | - | - | PCU PWB | Analog detector |

| | Code | Signal name | Name | Function/Operation | Type | Connector level | | PWB name | Note |
|---|--------|-------------|---|--|-------------------|-----------------|--------------------------------------|----------|--|
| | | | | | | "L" | "H" | | |
| | M1SPD | M1SPD | Paper remaining quantity detector (Paper feed tray 3) | Paper remaining quantity detection (Paper feed tray 3) | Transmission type | - | Remaining paper quantity 66% or less | PCU PWB | Paper feed tray remaining quantity sensor |
| ▲ | M1SS1 | M1SS1 | Paper size detector (Paper feed tray 3) | Paper size detection by combination of ON/OFF of MISS1 - 4 | Tact switch | | | PCU PWB | Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).) |
| ▲ | M1SS2 | M1SS2 | Paper size detector (Paper feed tray 3) | Paper size detection by combination of ON/OFF of MISS1 - 4 | Tact switch | | | PCU PWB | Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).) |
| ▲ | M1SS3 | M1SS3 | Paper size detector (Paper feed tray 3) | Paper size detection by combination of ON/OFF of MISS1 - 4 | Tact switch | | | PCU PWB | Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).) |
| ▲ | M1SS4 | M1SS4 | Paper size detector (Paper feed tray 3) | Paper size detection by combination of ON/OFF of MISS1 - 4 | Tact switch | | | PCU PWB | Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).) |
| | M2SPD | M2SPD | Paper remaining quantity detector (Paper feed tray 4) | Paper remaining quantity detection (Paper feed tray 4) | Transmission type | - | Remaining paper quantity 66% or less | PCU PWB | Paper feed tray remaining quantity sensor |
| ▲ | M2SS1 | M2SS1 | Paper size detector (Paper feed tray 4) | Paper size detection by combination of ON/OFF of MISS1 - 4 | Tact switch | | | PCU PWB | Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).) |
| ▲ | M2SS2 | M2SS2 | Paper size detector (Paper feed tray 4) | Paper size detection by combination of ON/OFF of MISS1 - 4 | Tact switch | | | PCU PWB | Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).) |
| ▲ | M2SS3 | M2SS3 | Paper size detector (Paper feed tray 4) | Paper size detection by combination of ON/OFF of MISS1 - 4 | Tact switch | | | PCU PWB | Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).) |
| ▲ | M2SS4 | M2SS4 | Paper size detector (Paper feed tray 4) | Paper size detection by combination of ON/OFF of MISS1 - 4 | Tact switch | | | PCU PWB | Multi paper feed tray vertical size detection (Refer to the separate table in the "[14] SIGNAL NAME LIST" (*1).) |
| | MHPS | MHPS | Scanner home position sensor | Scanner home position detection | Transmission type | | Home position | PCU PWB | Sensor |
| | OCSW | OCSW | SPF open/close detector | Document size detection trigger | Transmission type | Close | | SCN PWB | Sensor |
| | PCS | PCS | Image density sensor | Detection of density of toner patch on the OPC drum | Reflection type | - | - | PCU PWB | Analog detector |
| | PDSLEX | PDSLEX | Document size sensor (Light reception) (PT) | Document size detection | Photo transistor | - | - | SCN PWB | Other detector |
| ▲ | RTH1 | RTH1 | Heat roller temperature sensor (Center section) | Heat roller temperature detection (Center section) | Thermistor | - | - | PCU PWB | Analog detector |
| ▲ | RTH2 | RTH2 | Heat roller temperature sensor (Edge section) | Heat roller temperature detection (Edge section) | Thermistor | - | - | PCU PWB | Analog detector |
| | RTH3 | RTH3 | Sub heat roller temperature sensor | Sub heat roller temperature detection | Thermistor | - | - | PCU PWB | Analog detector |
| | SCOV | SCOV | SPF cover switch | SPF cover open/close detection | Transmission type | | Close | SCN PWB | Sensor |

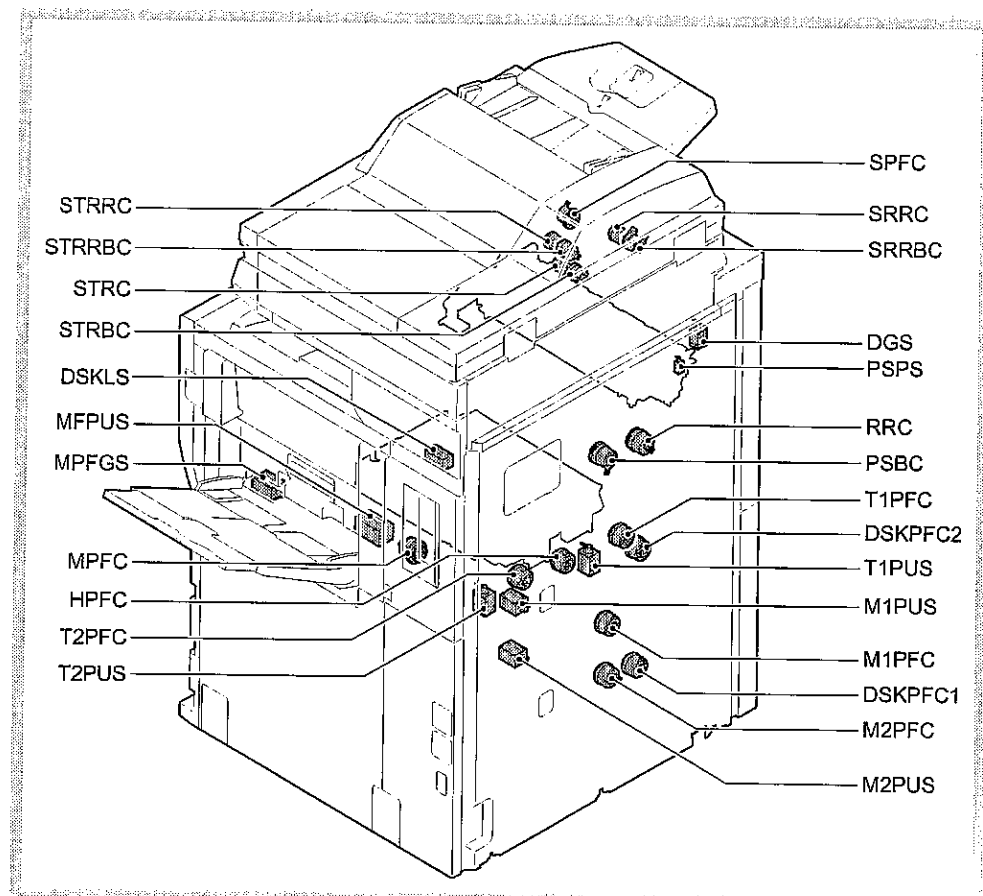
| Code | Signal name | Name | Function/Operation | Type | Connector level | | PWB name | Note |
|--------|-------------|---|--|---------------------|--------------------------|--------------------------------------|----------|---|
| | | | | | "L" | "H" | | |
| SOCD | SOCD | SPF open/close detector | SPF unit open/close detection | Transmission type | | Close | SCN PWB | Sensor |
| T1SPD | T1SPD | Paper remaining quantity detector (Paper feed tray 1) | Paper remaining quantity detection (Paper feed tray 1) | Transmission type | - | Remaining paper quantity 50% or less | PCU PWB | Paper feed tray remaining quantity sensor |
| T2SPD | T2SPD | Paper remaining quantity detector (Paper feed tray 2) | Paper remaining quantity detection (Paper feed tray 2) | Transmission type | - | Remaining paper quantity 33% or less | PCU PWB | Paper feed tray remaining quantity sensor |
| TANSET | TANSET | Paper feed tray 1/2 detection signal | Paper feed tray 1, 2 (Tandem tray) insertion detection | Transmission type | Pull-out | Insertion | PCU PWB | Paper feed tray system sensor |
| TCS | TCS | Toner density sensor | Toner density detection | Magnetic sensor | - | - | PCU PWB | Analog detector |
| TFSD | TFSD | Toner remaining quantity sensor | Toner hopper toner remaining quantity detection | Magnetic sensor | Remaining quantity great | Remaining quantity small | PCU PWB | Other sensor, switch |
| TH | TH | LCD thermistor | LCD section temperature detection | Thermistor | - | - | SCN PWB | Other detector |
| TH-CL | TH-CL | OPC drum temperature sensor | OPC drum peripheral temperature detection | Thermistor | - | - | PCU PWB | Analog detector |
| TH-DV | TH-DV | Developing humidity sensor | Developing section humidity detection | Thermistor/humidity | - | - | PCU PWB | Analog detector |
| TH-EX | TH-EX | Paper exit unit temperature sensor | Paper exit unit peripheral temperature detection (Cooling fan operation monitor) | Thermistor | - | - | PCU PWB | Analog detector |
| TH-RA | TH-RA | Room temperature sensor | Room temperature detection | Thermistor | - | - | PCU PWB | Analog detector (Not used) |
| THPS2 | THPS2 | Transfer belt contact/separation home position sensor 2 | Transfer belt separation home position detection 2 | Transmission type | - | Contact | PCU PWB | Not used. |
| TLS | TLS | Waste toner pipe lock detector | Waste toner pipe lock detection | Lead type | - | Lock (Tilt) | PCU PWB | Other sensor, switch |
| TNCA | TNCA | Waste toner full detection signal | Waste toner full detection | Magnetic sensor | - | - | PCU PWB | Not used. |

B. Switch



| Code | Signal name | Name | Type | Function/Operation | MODEL | Active condition | NOTE |
|-------|-------------|--|---------------|---|-------|------------------|----------------------------|
| DSW-F | DSW-F | Front door open/close switch | Micro switch | Front door open/close detection, Main charger power source, Developing bias power line open/close | | | |
| DSW-L | DSW-L | Left door open/close switch | Micro switch | Left door open/close detection, Main charger power source, Developing bias power line open/close | | | |
| DSW-R | DSW-R | Manual paper feed unit open/close switch | Micro switch | Manual paper feed unit open/close detection, Main charger power source, Developing bias power line open/close | | | |
| MPSW | | Main power switch | Seesaw switch | Turns ON/OFF all the power sources. | | | |
| MSW | | Power switch | Seesaw switch | Turns ON/OFF the main DC power source. (Turns ON/OFF the engine power source except for the sub DC power source.) | | | Shut-off solenoid built-in |
| WH-SW | WH-SW | Dry heater switch | Seesaw switch | Turns ON/OFF the power line of the dry heater. | | | |

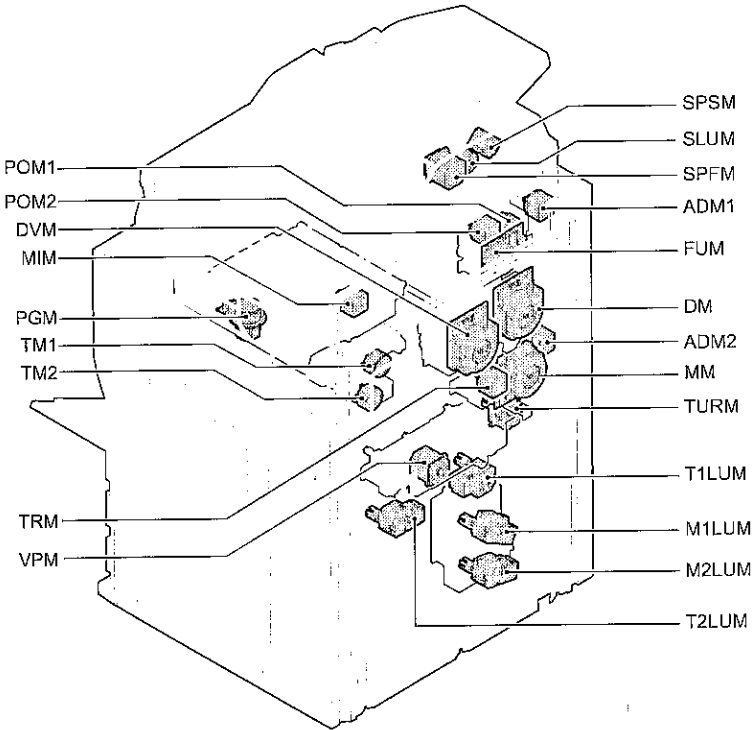
C. Clutch/solenoid



| Code | Signal name | Name | Function/Operation | Type | MODEL | NOTE |
|---------|-------------|--|---|--------------------------|-------|------|
| DGS | DGS | Paper exit gate solenoid | Paper exit gate drive | Electromagnetic solenoid | | |
| DSKLS | DSKLS | Paper guide lock solenoid | Lock the horizontal transport paper guide. | Electromagnetic solenoid | | |
| DSKPFC1 | DSKPFC1 | Paper feed tray 3/4 paper transport clutch 1 | Paper feed tray 3/4 section paper transport roller ON/OFF control | Electromagnetic clutch | | |
| DSKPFC2 | DSKPFC2 | Paper feed tray 3/4 paper transport clutch 2 | Paper feed tray 3/4 section paper transport roller ON/OFF control | Electromagnetic clutch | | |
| HPFC | HPFC | Horizontal paper transport clutch | Manual paper feed, paper feed tray 2 section, LCC paper transport roller ON/OFF control | Electromagnetic clutch | | |
| M1PFC | M1PFC | Paper feed clutch (Paper feed tray 3) | Paper feed tray 3 section roller ON/OFF control | Electromagnetic clutch | | |
| M1PUS | M1PUS | Paper pickup solenoid (Paper feed tray 3) | Presses the paper pickup roller onto paper. | Electromagnetic solenoid | | |
| M2PFC | M2PFC | Paper feed clutch (Paper feed tray 4) | Paper feed tray 4 section roller ON/OFF control | Electromagnetic clutch | | |
| M2PUS | M2PUS | Paper pickup solenoid (Paper feed tray 4) | Presses the paper pickup roller onto paper. | Electromagnetic solenoid | | |
| MFPUS | MFPUS | Paper pickup solenoid (Manual paper feed) | Presses the paper pickup roller onto paper. | Electromagnetic solenoid | | |
| MPFC | MPFC | Paper feed clutch (Manual paper feed) | Manual paper feed section paper feed roller ON/OFF control | Electromagnetic clutch | | |
| MPFGS | MPFGS | Manual paper feed gate solenoid | Manual feed gate solenoid open/close control | Electromagnetic solenoid | | |
| PSBC | PSBC | Resist roller brake clutch | Resist roller braking | Electromagnetic clutch | | |
| PSPS | PSPS | Separation solenoid | OPC drum separation pawl drive | Electromagnetic solenoid | | |
| RRC | RRC | Resist roller clutch | Resist roller ON/OFF control | Electromagnetic clutch | | |

| Code | Signal name | Name | Function/Operation | Type | MODEL | NOTE |
|--------|-------------|---|--|--------------------------|-------|------|
| SPFC | SPFC | SPF paper feed clutch | SPF paper feed section roller ON/OFF control | Electromagnetic clutch | | |
| SRRBC | SRRBC | SPF resist roller brake clutch | SPF resist roller braking | Electromagnetic clutch | | |
| SRRC | SRRC | SPF resist roller clutch | SPF resist roller ON/OFF control | Electromagnetic clutch | | |
| STMPS | STMPS | Stamp solenoid control signal | Stamp drive | Electromagnetic solenoid | | |
| STRBC | STRBC | SPF paper transport roller 2 brake clutch | SPF transport roller 2 braking | Electromagnetic clutch | | |
| STRC | STRC | SPF paper transport roller 2 clutch | SPF transport roller 2 ON/OFF control | Electromagnetic clutch | | |
| STRRBC | STRRBC | SPF No. 1 resist roller breake clutch | SPF transport roller 3 braking | Electromagnetic clutch | | |
| STRRC | STRRC | SPF No. 1 resist roller clutch | SPF transport roller 3 ON/OFF control | Electromagnetic clutch | | |
| T1PFC | T1PFC | Paper feed clutch (Paper feed tray 1) | Paper freed tray 1 section roller ON/OFF control | Electromagnetic clutch | | |
| T1PUS | T1PUS | Paper pickup solenoid (Paper feed tray 1) | Presses the paper pickup roller onto paper. | Electromagnetic solenoid | | |
| T2PFC | T2PFC | Paper feed clutch (Paper feed tray 2) | Paper freed tray 2 section roller ON/OFF control | Electromagnetic clutch | | |
| T2PUS | T2PUS | Paper pickup solenoid (Paper feed tray 2) | Presses the paper pickup roller onto paper. | Electromagnetic solenoid | | |

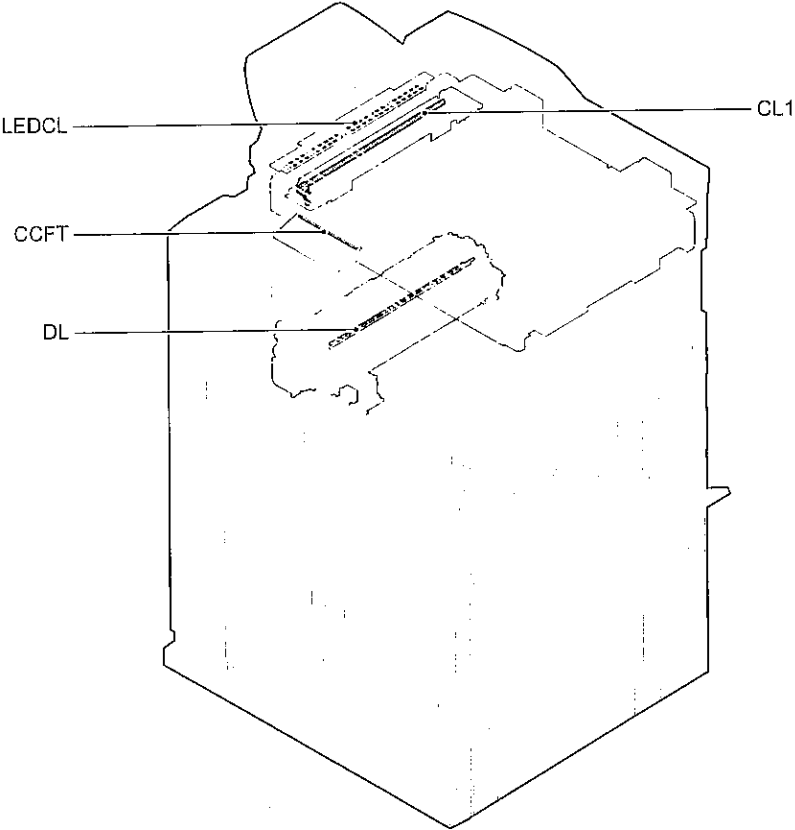
D. Motor



| Code | Signal name | Name | Type | Function/Operation | Active condition | MODEL | NOTE |
|------|-------------|----------------------|--------------------|--|------------------|-------|---------------------------------------|
| ADM1 | ADM1 | Duplex (ADU) motor 1 | Stepping motor | Drives the paper transport roller 2 and the paper transport roller 19. | | | High speed |
| ADM2 | ADM2 | Duplex (ADU) motor 2 | Stepping motor | Drives the paper exit rollers 20 and 21. | | | Selection of Normal speed/ High speed |
| DM | DM | OPC drum motor | DC brushless motor | Drives the OPC drum and the transfer section. | | | |
| DVM | DVM | Developing motor | DC brushless motor | Drives the developing section. | | | |
| FUM | FUM | Fusing motor | DC brushless motor | Drives the fusing section. | | | |

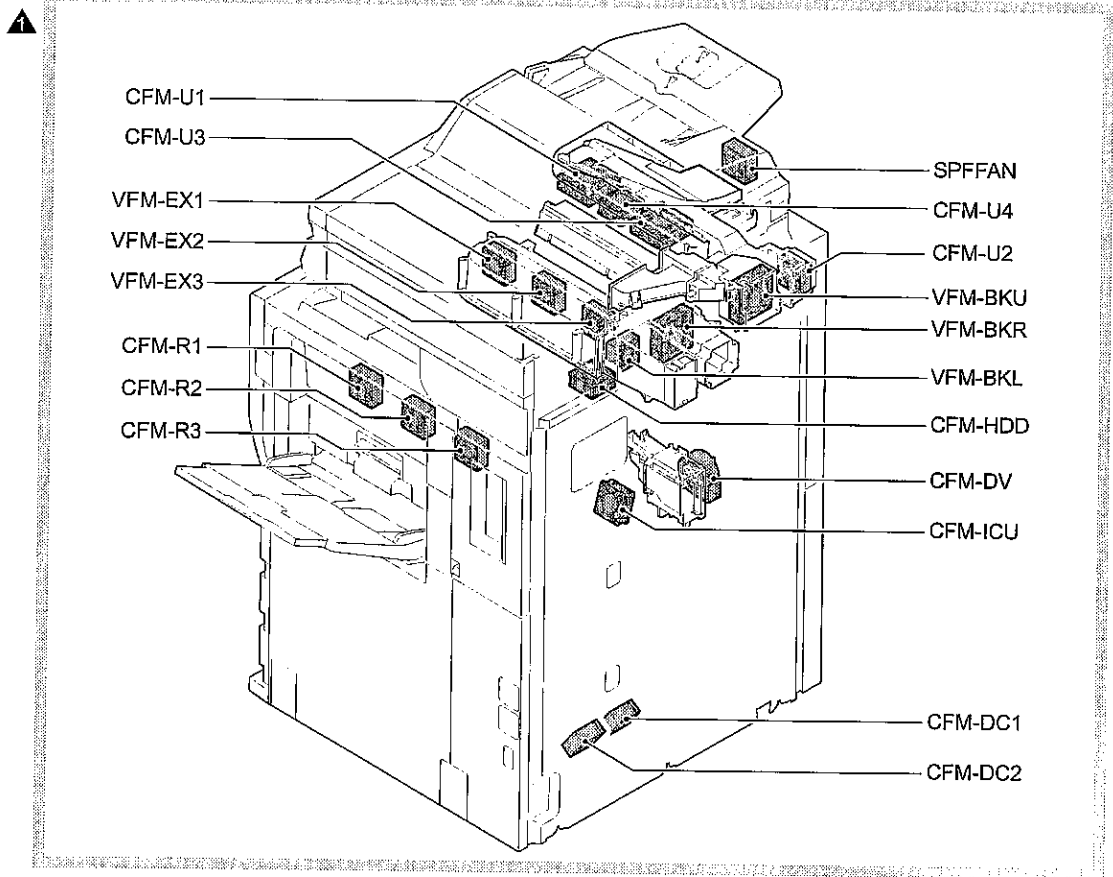
| Code | Signal name | Name | Type | Function/Operation | Active condition | MODEL | NOTE |
|--------|-------------|---|--------------------|---|------------------|-------|--|
| M1LUM | M1LUM | Paper feed tray lift-up motor (Paper feed tray 3) | DC brush motor | Drives the lift plate of the paper feed tray. | | | Selection of Rotation mode/ Brake mode |
| M2LUM | M2LUM | Paper feed tray lift-up motor (Paper feed tray 4) | DC brush motor | Drives the lift plate of the paper feed tray. | | | Selection of Rotation mode/ Brake mode |
| MIM | MIM | Scanner (reading) motor | Stepping motor | Drives the scanner (reading) section. | | | |
| MM | MM | Main motor | DC brushless motor | Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section. | | | |
| PGM | PGM | LSU motor | DC brushless motor | Drives the scanner (writing) (LSU) unit mirror. | | | |
| POM1 | POM1 | Paper exit motor 1 | Stepping motor | Drives the paper transport roller 16. | | | Selection of Normal speed/ High speed |
| POM2 | POM2 | Paper exit motor 2 | Stepping motor | Drives the paper exit roller 1. | | | Selection of Normal speed/ High speed/ Reverse rotation |
| SLU | /SLUM | SPF paper tray lift motor | Stepping motor | Lifts up and down the SPF paper feed tray. | | | |
| ▲ SPFM | SPFM1 | SPF paper feed motor, paper transport motor | Stepping motor | Drives the paper feed roller and the transport roller. | | | |
| ▲ SPSM | SPFM2 | SPF paper exit motor | Stepping motor | Drives the paper exit roller. (SPF) | | | |
| T1LUM | T1LUM | Paper feed tray lift-up motor (Paper feed tray 1) | DC brush motor | Drives the lift plate of the paper feed tray. | | | Selection of Rotation mode/ Brake mode |
| T2LUM | T2LUM | Paper feed tray lift-up motor (Paper feed tray 2) | DC brush motor | Drives the lift plate of the paper feed tray. | | | Selection of Rotation mode/ Brake mode |
| TM1 | TM1 | Toner motor 1 | Synchronous motor | Transports toner in the toner hopper to the developing unit. / Transports waste toner to the waste toner section. | | | |
| TM2 | TM2 | Toner motor 2 | Synchronous motor | Transports toner in the toner bottle to the toner hopper. | | | |
| TRM | TRM | Resist roller front drive motor | Stepping motor | Drives the paper transport roller 15. | | | Normal speed mode/ Resist roller front paper transport timing control (Warp amount control) |
| ▲ TURM | TURM | Transfer separation motor | DC brush motor | Drives and separates the transfer belt. | | | When executing the process correction and detecting a jam, the transfer belt is separated from the OPC drum. |
| ▲ VPM | VPM | Vertical paper transport motor | Stepping motor | Drives the paper transport rollers 4 and 13. | | | Normal speed mode |

E. Lamp



| Code | Signal name | Name | Type | Function/Operation | Active condition | MODEL | NOTE |
|-------|-------------|----------------|---------------|---|------------------|-------|------|
| CL1 | CL1 | Scanner lamp | Xenon lamp | Radiates lights onto a document for the CCD to scan the document image. | | | |
| CCFT | CCFT | LCD backlight | CCFT cool CRT | LCD backlight | | | |
| DL | DL | Discharge lamp | Lamp | Discharges electric charges on the OPC drum. | | | |
| LEDCL | LEDCL | CIS lamp (LED) | LED | Radiates lights onto a document for the CCD to scan the document image. | | | |

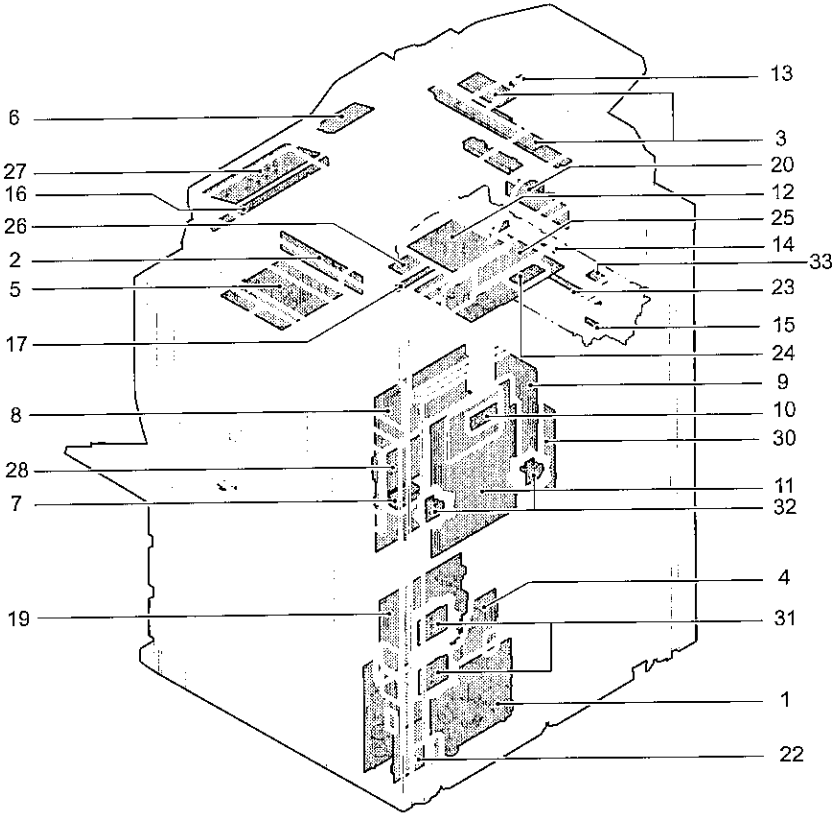
F. Fan motor



| Code | Signal name | Name | Type | Function/Operation | Active condition | MODEL | NOTE |
|---------|-------------|---|--------------------|---|------------------|-------|-------------|
| CFM-DC1 | CFM-DC1 | Power cooling fan motor | DC brushless motor | Cools the DC power unit. | | | |
| CFM-DC2 | CFM-DC2 | Power cooling fan motor | DC brushless motor | Cools the DC power unit. | | | |
| CFM-DV | CFM-DV | Developing section cooling fan motor | DC brushless motor | Cools the developing section. | | | PWM control |
| CFM-HDD | CFM-HDD | HDD cooling fan motor | DC brushless motor | Cools the HDD. | | | PWM control |
| CFM-ICU | CFM-ICU | Controller cooling fan motor | DC brushless motor | Cools the controller. | | | PWM control |
| CFM-R1 | CFM-R1 | Process cooling fan motor 1 (LSU/process section) | DC brushless motor | Cools the LSU/ process section. | | | PWM control |
| CFM-R2 | CFM-R2 | Process cooling fan motor 2 (LSU/process section) | DC brushless motor | Cools the LSU/ process section. | | | PWM control |
| CFM-R3 | CFM-R3 | Process cooling fan motor 3 (LSU/process section) | DC brushless motor | Cools the LSU/ process section. | | | PWM control |
| CFM-U1 | CFM-U1 | Fusing section cooling fan motor 1 (Paper exit/duplex (ADU) section) (Top surface) | DC brushless motor | Exhaust heat from the fusing section. | | | PWM control |
| CFM-U2 | CFM-U2 | Fusing section cooling fan motor 2 (Paper exit/duplex (ADU) section) (Paper exit rear side) | DC brushless motor | Exhaust heat from the fusing section. | | | PWM control |
| CFM-U3 | CFM-U3 | Fusing section cooling fan motor 3 (Paper exit/duplex (ADU) section)(Top surface) | DC brushless motor | Exhaust heat from the fusing section. | | | PWM control |
| CFM-U4 | CFM-U4 | Fusing section cooling fan motor 4 (Paper exit/duplex (ADU) section)(Paper cooling fan motor) | DC brushless motor | Cools paper which is discharged to the inner tray. | | | PWM control |
| SPFFAN | SPFFAN | SPF fan motor | DC brushless motor | Exhausts heat generated by the motor clutch in the SPF. | | | PWM control |

| Code | Signal name | Name | Type | Function/Operation | Active condition | MODEL | NOTE |
|---------|-------------|--|--------------------|--|------------------|-------|-------------|
| VFM-BKL | VFM-BKL | Process exhaust fan motor 4 | DC brushless motor | Exhaust ozone and heat from the process section. | | | PWM control |
| VFM-BKR | VFM-BKR | Fusing exhaust fan motor | DC brushless motor | Exhaust heat from the fusing section. | | | PWM control |
| VFM-BKU | VFM-BKU | Paper cooling fan motor | DC brushless motor | Exhaust heat from paper in the inner tray. | | | PWM control |
| VFM-EX1 | VFM-EX1 | Process exhaust fan motor 1 (Front side) | DC brushless motor | Exhaust ozone and heat from the process section. | | | PWM control |
| VFM-EX2 | VFM-EX2 | Process exhaust fan motor 2 (Center) | DC brushless motor | Exhaust ozone and heat from the process section. | | | PWM control |
| VFM-EX3 | VFM-EX3 | Process exhaust fan motor 3 (Rear side) | DC brushless motor | Exhaust ozone and heat from the process section. | | | PWM control |

G. PWB (Main unit section)

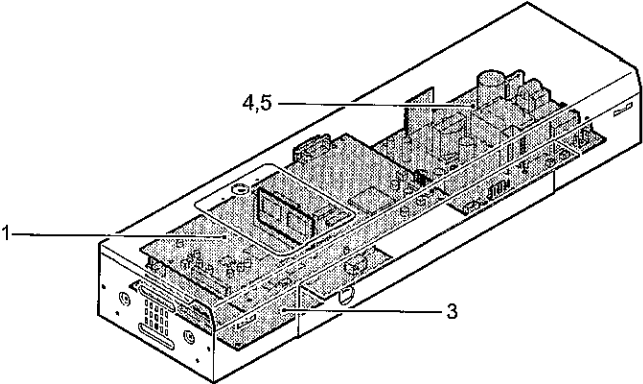


| No | Name | Function/Operation | MODEL | NOTE |
|----|---|---|-------|------|
| 1 | AC power PWB | Controls the AC power. | | |
| 2 | CCD PWB | Scans document images. | | |
| 3 | CIS control PWB/CIS unit | Scans document images (back surface) and controls the CIS unit. | | |
| 4 | DC main power PWB | Generates the DC power. | | |
| 5 | DC sub power PWB | Generates the DC power in the power save mode. | | |
| 6 | LVDS/INV PWB | Generates the LCD display signal, and generates a high voltage for backlight. | | |
| 7 | MFP FLASH ROM PWB | Stores the MFP control program. | | |
| 8 | MFP controller PWB | Controls the image-related items and controls all over the machine. | | |
| 9 | Mother PWB | Interfaces the MFP control PWB and the PCU PWB. | | |
| 10 | PCU FLASH ROM PWB | Stores the PCU control program. | | |
| 11 | PCU PWB | Controls the engine section. | | |
| 12 | SPF PWB | Drives the SPF section loads./ Interfaces the sensor and detector signals. | | |
| 13 | SPF paper width detection PWB | Detects the SPF paper tray paper width. | | |
| 14 | Image density sensor PWB | Detects the toner patch density in the image density correction. | | |
| 15 | OPC drum mark sensor PWB | Detects the OPC drum mark. | | |
| 16 | Document size detection light reception PWB | Generates the document size detection signal. | | |



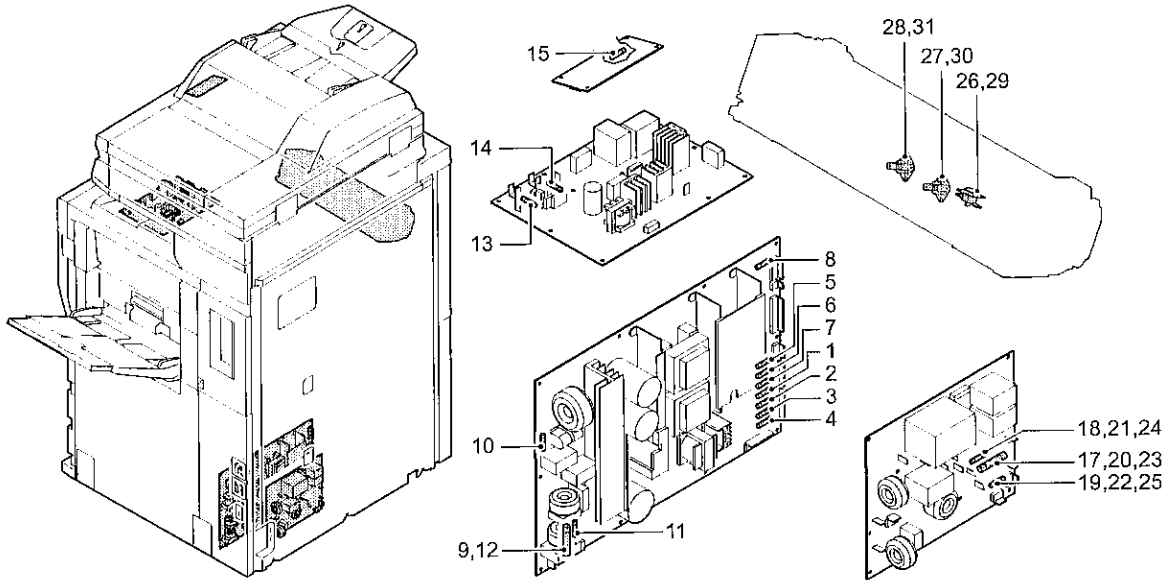
| No | Name | Function/Operation | MODEL | NOTE |
|----|---|---|-------|------|
| 17 | Document size detection light emitting PWB | Generates lights to detect the document size. | | |
| 19 | High voltage PWB (MC/DV/TC) | Generates the main charger voltage, the developing bias voltage, the transfer voltage and the transfer belt cleaning voltage. | | |
| 20 | Transfer bias high voltage PWB (TD CL) | Provides the bias voltage for the transfer cleaning roller and the print mode. | | |
| 22 | Dehumidifier heater relay PWB | Controls ON/OFF of the dehumidifier heater. | | |
| 23 | Discharge lamp PWB | Generates light for discharging. | | |
| 24 | Scanner Flash PWB | Stores the scanner control program. | | |
| 25 | Scanner control PWB | Controls the scanner section. | | |
| 26 | Scanner relay PWB | Interfaces the scanner control PWB, the CCD PWB, the operation control PWB and the LVDS/INV PWB. | | |
| 27 | Operationcontrol PWB | Controls the display operation panel. | | |
| 28 | Soft NIC PWB | Controls the network. | | |
| 29 | Manual feed paper width detection PWB | Detects the manual paper feed tray paper width. | | |
| 30 | Driver PWB | Drives the motors. | | |
| 31 | Paper size detection PWB (Paper feed tray 3, 4) | Detects the paper size. | | |
| 32 | Detector PWB (Paper feed tray 1, 2) | Detects the paper empty and upper limit tray. | | |
| 33 | Photoconductor temperature sensor PWB | Temperature detection around the photoconductor | | |

H. FAX section



| No | Name | Function/Operation | MODEL | NOTE |
|----|------------------|---|---------------|----------|
| 1 | MDMC PWB | Controls the Modem and the TEL/LIU PWB. | Modem control | FAX unit |
| 2 | FAX IF PWB | <ul style="list-style-type: none">• Interfaces the MDMC PWB and the main unit controller PWB.• Installs the FAX image memory. (Expansion memory AR-MM9 can be installed.) | | |
| 3 | TEL/LIU PWB | <ul style="list-style-type: none">• Controls the line. (Call-out, polarity reversion detection, CI detection, line monitor, etc.)• Connection of an externally connected telephone line. | | |
| 4 | FAX AC power 100 | Generates the FAX DC power of 100V. | | |
| 5 | FAX AC power 200 | Generates the FAX DC power of 200V. | | |

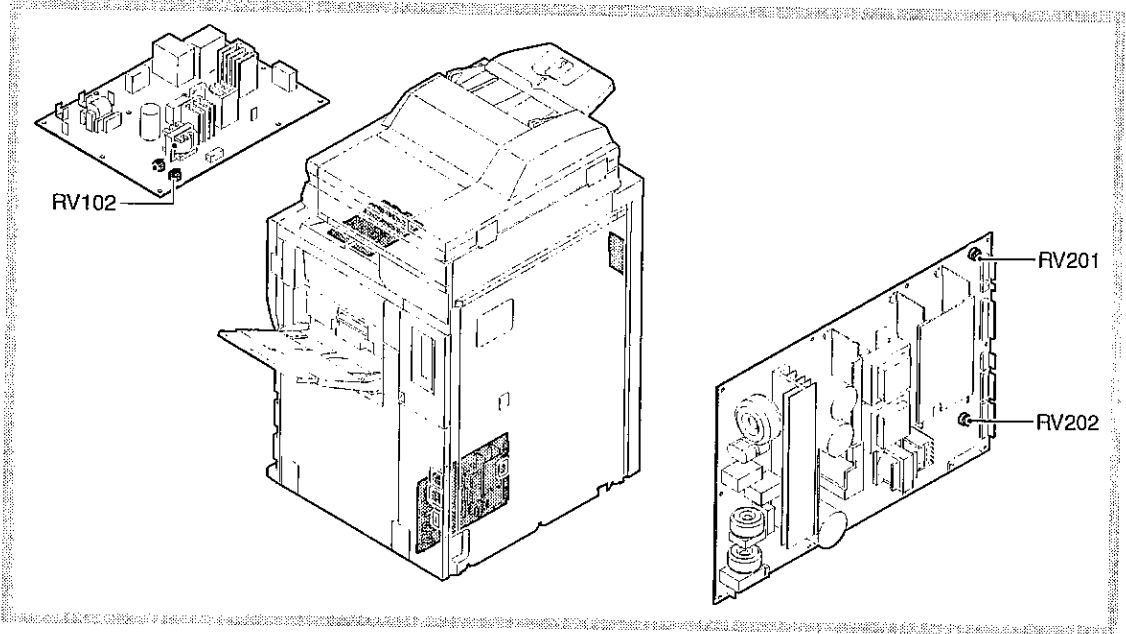
I. Fuse/thermostat



| No. | Code | Name | Type | Specificaition | Funciton/Operation | Section | NOTE |
|------|-------|------|-------------------------|----------------|---|--------------------|-----------------------------|
| 1 | F201 | Fuse | Time lag | 250V 6.3A | PCU PWB protection (24V1) | DC main power PWB | 100V system/ 200V system |
| 2 | F202 | Fuse | Time lag | 250V 6.3A | Driver PWB protection (24V2) | DC main power PWB | 100V system/ 200V system |
| 3 | F203 | Fuse | Time lag | 250V 6.3A | Scanner control PWB protection (24V3) | DC main power PWB | 100V system/ 200V system |
| 4 | F204 | Fuse | Time lag | 250V 6.3A | LCC control PWB protection (24V4) | DC main power PWB | 100V system/ 200V system |
| 5 | F205 | Fuse | Time lag | 250V 6.3A | Finisher protection (24V5) | DC main power PWB | 100V system/ 200V system |
| 6 | F206 | Fuse | Time lag | 250V 6.3A | Insertier protection (24V6) | DC main power PWB | 100V system/ 200V system |
| 7 | F207 | Fuse | | | NOT USED | DC main power PWB | 100V system/ 200V system |
| 8 | F208 | Fuse | Time lag | 250V 6.3A | Motor protection (38V) | DC main power PWB | 100V system/ 200V system |
| 9 | F1 | Fuse | Time lag | 250V 15A | DC power source overcurrent protection (Main source) | DC main power PWB | 100V system |
| 10 | F2 | Fuse | Time lag | 250V 3.15A | Varistor overcurrent protection | DC main power PWB | 100V system/ 200V system |
| 11 | F3 | Fuse | Time lag | 250V 5A | MFP controller PWB power source protection (12V1, 5V1) | DC main power PWB | 100V system/ 200V system |
| 12 | F1 | Fuse | Time lag | 250V 8A | DC power source overcurrent protection (Main source) | DC main power PWB | 200V system |
| 13 | F101 | Fuse | Time lag | 250V 2A | DC sub power source oevercurrent protection (Main source) | DC sub power PWB | 100V system/ 200V system |
| 14 | F102 | Fuse | Time lag | 250V 2A | DC sub power source overcurrent protection (Main source) | DC sub power PWB | 100V system/ 200V system |
| 15 | F1 | Fuse | Immediate-decision type | 250V 200mA | LCD inverter circuit overcurrent protection | LVDS/INV PWB | Common |
| 16 | | Fuse | | | | | |
| ▲ 17 | F1,F2 | Fuse | Time lag | 125V 20A | AC power source overcurrent protection (Main source) | AC power PWB J | Japan100V |
| ▲ 18 | F3,F4 | Fuse | Time lag | 250V 2.0A | Thermal heater overcurrent protection | AC power PWB J | Japan100V |
| ▲ 19 | F5 | Fuse | Time lag | 250V 2.5A | MSW detection circuit overcurrent protection | AC power PWB J | Japan100V |
| 20 | F1 | Fuse | Time lag | 250V 20A | AC power source overcurrent protection (Main source) | AC power PWB EX100 | EX Japan 100V system |
| 21 | F3 | Fuse | Time lag | 250V 2.0A | Thermal heater overcurrent protection | AC power PWB EX100 | EX Japan 100V system |
| 22 | F5 | Fuse | Time lag | 250V 2.5A | MSW detection circuit overcurrent protection | AC power PWB EX100 | EX Japan 100V system |

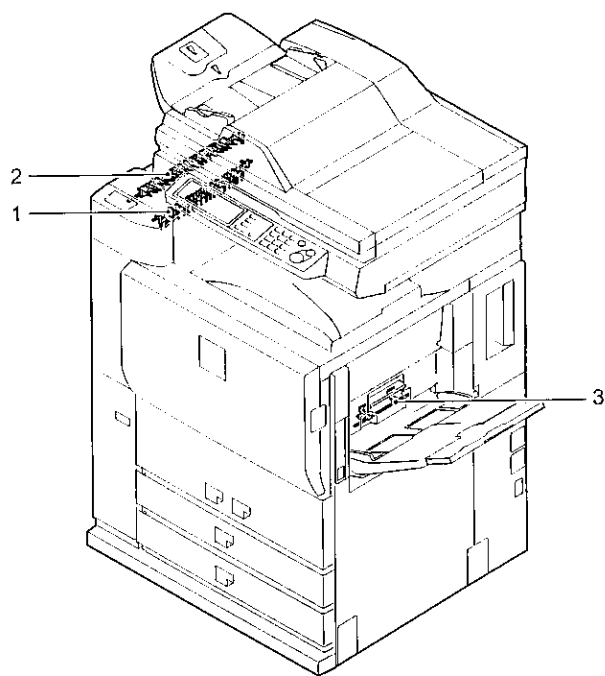
| No. | Code | Name | Type | Specificaiton | Funciton/Operation | Section | NOTE |
|-----|-------|------------|----------|--------------------------|--|--------------------|----------------------|
| 23 | F1,F2 | Fuse | Time lag | 240V 10A | AC power source overcurrent protection (Main source) | AC power PWB EX200 | EX Japan 200V system |
| 24 | F3,F4 | Fuse | Time lag | 250V 2.0A | Thermal heater overcurrent protection | AC power PWB EX200 | EX Japan 200V system |
| 25 | F5 | Fuse | Time lag | 250V 2.5A | MSW detection circuit overcurrent protection | AC power PWB EX200 | EX Japan 200V system |
| 26 | HLTS1 | Thermostat | | 120VAC 15A 240VAC 10A | Fusing roller overheat protection | Fusing unit | Japan |
| 27 | HLTS2 | Thermostat | | 120VAC 15A 240VAC 10A | Fusing roller overheat protection | Fusing unit | Japan |
| 28 | HLTS3 | Thermostat | | 120VAC 15A 240VAC 10A | Sub heat roller overheat protection | Fusing unit | Japan |
| 29 | HLTS1 | Thermostat | | 120VAC 15A 240VAC 10A | Fusing roller overheat protection | Fusing unit | EX Japan |
| 30 | HLTS2 | Thermostat | | 120VAC 15A 240VAC 10A | Fusing roller overheat protection | Fusing unit | EX Japan |
| 31 | HLTS3 | Thermostat | | 120VAC 15A 240VAC 10A | Sub heat roller overheat protection | Fusing unit | EX Japan |

J. Adjustment volume



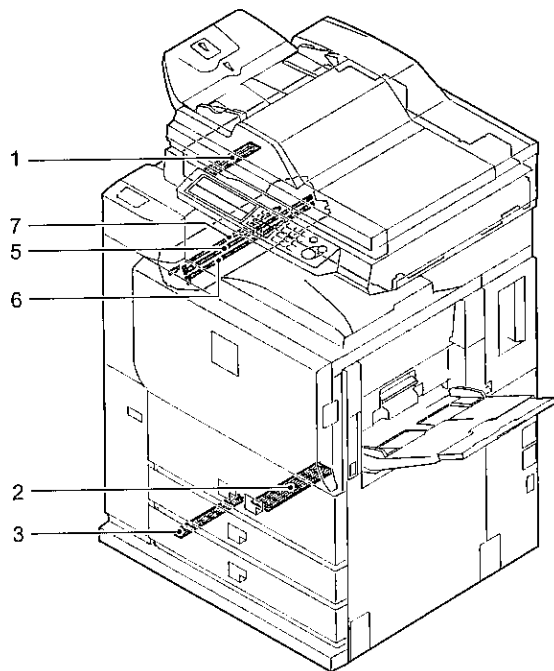
| Name | Function/Operation | MODEL | NOTE |
|-------|--|-------|------|
| RV102 | DC sub power unit +12V power output voltage adjustment VR | | |
| RV201 | DC main power unit +38V power output voltage adjustment VR | | |
| RV202 | DC main power unit +24V power output voltage adjustment VR | | |
| | | | |
| | | | |

K. Gate



| No. | Name | Function/Operation | MODEL | NOTE |
|-----|------------------|--|-------|--|
| 1 | Switchback gate | Selects the paper route when discharging paper to the inner tray and when switching back. | | Switched not by the solenoid drive but by the automatic procedure. |
| 2 | Paper exit gate | Selects the paper route to transport paper to the duplex (ADU) section or to discharge paper. | | Driven by the solenoid (DGS). |
| 3 | Manual feed gate | Specifies the lead edge position of paper when setting paper. (Prevention against double feed, and erroneous take-up of all paper into the paper feed roller) | | |

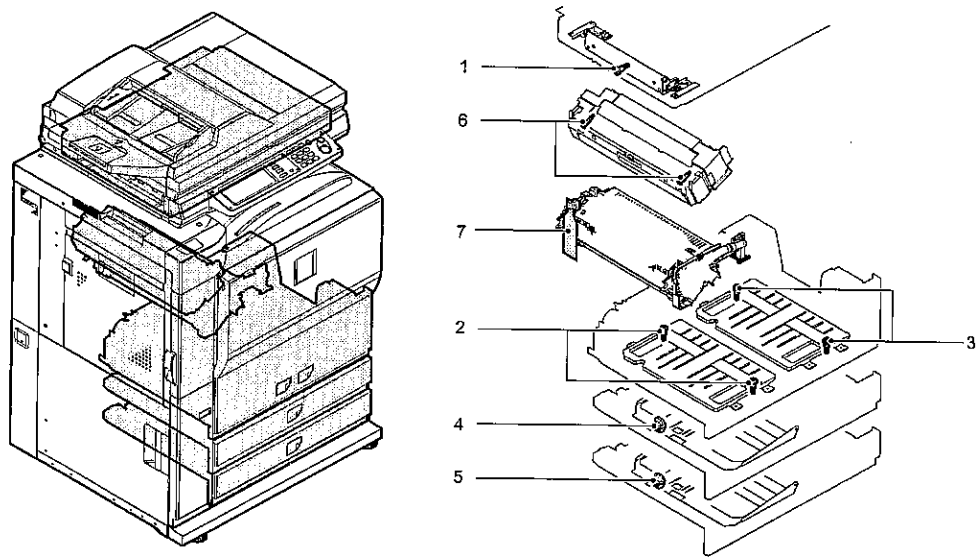
L. Heater



| Code | Name | Type | Function/Operation | MODEL | NOTE |
|------|-----------------|--------------|---|-------|------|
| HL1 | Heater lamp 1 | Halogen lamp | Heats the center of the upper fusing roller. | | |
| HL2 | Heater lamp 2 | Halogen lamp | Heats the both ends of the upper fusing roller. | | |
| HL3 | Sub heater lamp | Halogen lamp | Heats the fusing roller (pressing roller). | | |

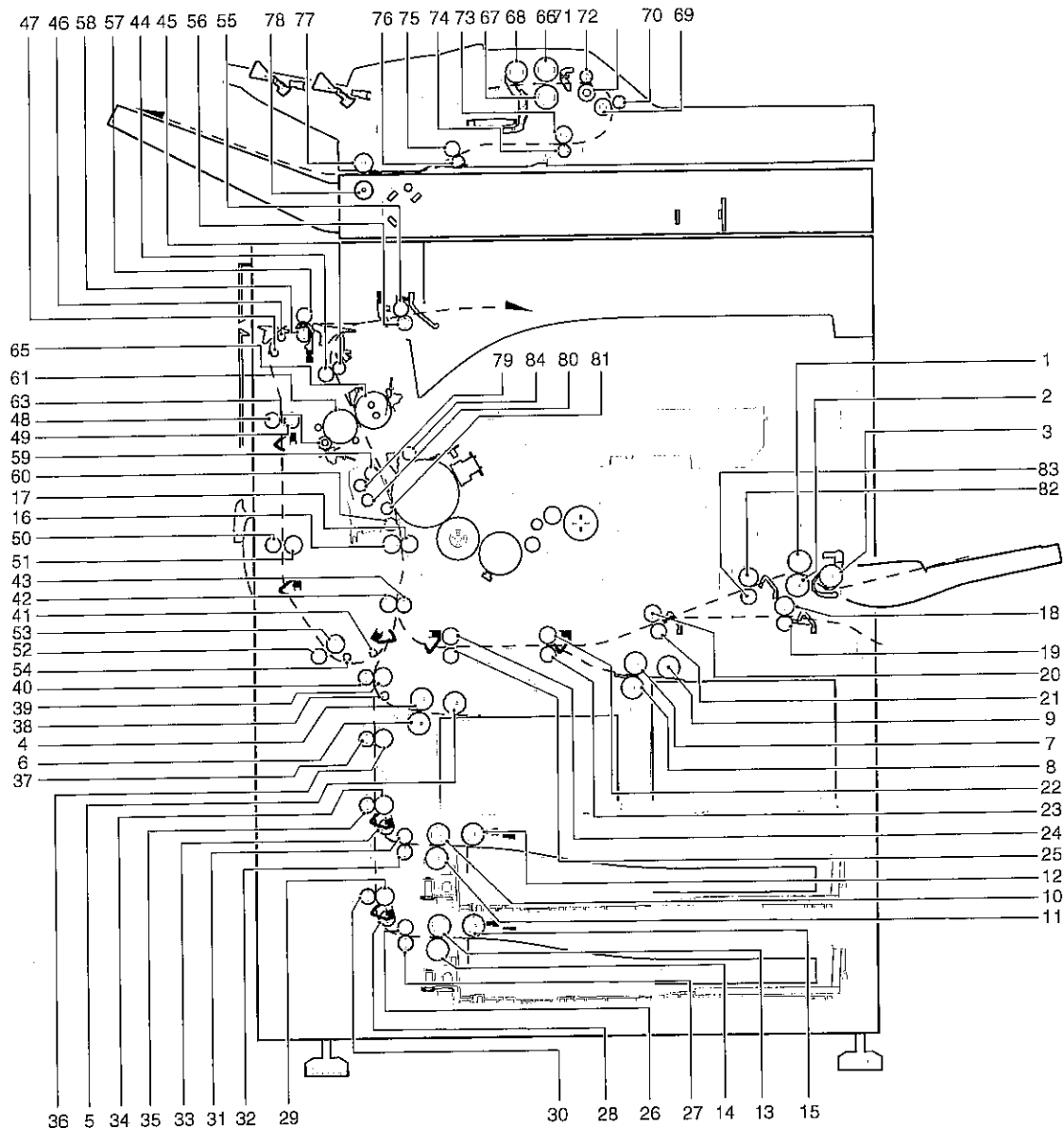
| Code | Name | Type | Function/Operation | MODEL | NOTE |
|----------|-----------------------------------|---------------------|--|-------|--|
| WH1 DESK | Dry heater (Paper feed tray 1, 2) | Nichrome wire (18W) | Dehumidifies paper on the paper feed tray 1 and 2. | | Standard for Japan model, option for the other destinations. |
| WH1 SCN | Scanner dry heater | Nichrome wire (7W) | Dehumidifies the scanner section. | | Standard for Japan model, option for the other destinations. |
| WH2 DESK | Dry heater (Paper feed tray 3, 4) | Nichrome wire (10W) | Dehumidifies paper on the paper feed tray 3 and 4. | | Standard for Japan model, option for the other destinations. |

M. Lock position



| No. | Name | Function/Operation | MODEL | NOTE |
|-----|-------------------------------------|--|-------|--|
| 1 | Scanner lock screw | Locks the scanner. (Protects the scanner unit from breakage during transit.) | | Bu sure to lock during transit. |
| 2 | Paper tray 1 lock block | Locks the paper lift plate | | |
| 3 | Paper tray 2 lock block | Locks the paper lift plate | | |
| 4 | Paper tray 3 lock block | Locks the paper lift plate | | |
| 5 | Paper tray 4 lock block | Locks the paper lift plate | | |
| 6 | Fusing pressure release screw | Apply and release a pressure to/from the fusing roller. | | Release a pressure when storing for a long time. |
| 7 | OPC drum separation pawl lock block | Protects the OPC drum from contact with the separation pawl. | | |

N. Roller

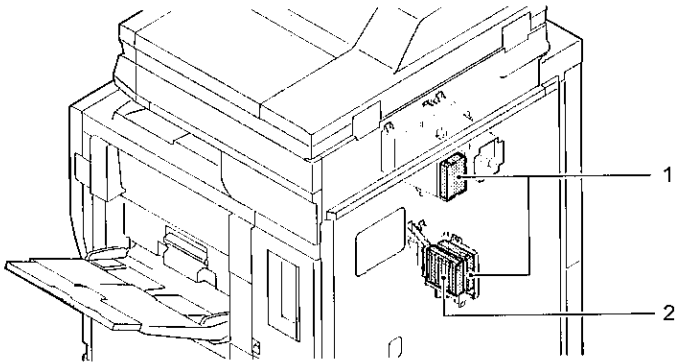


| No. | Name | Function/Operation | NOTE |
|-----|---|--|------|
| 1 | Paper feed roller (Manual paper feed tray) | Feeds paper to the paper transport section. | |
| 2 | Separation roller (Manual paper feed tray) | Separates paper to prevent against double-feed. | |
| 3 | Paper pickup roller (Manual paper feed tray) | Sends paper to the paper transport section. | |
| 4 | Paper feed roller (No. 1 paper feed tray) | Feeds paper to the paper transport section. | |
| 5 | Paper pickup roller (No. 1 paper feed roller) | Sends paper to the paper transport section. | |
| 6 | Separation roller (No. 1 paper feed tray) | Separates paper to prevent against double-feed. | |
| 7 | Paper feed roller (No. 2 paper feed tray) | Feeds paper to the paper transport section. | |
| 8 | Separation roller (No. 2 paper feed tray) | Separates paper to prevent against double-feed. | |
| 9 | Paper pickup roller (No. 2 paper feed roller) | Sends paper to the paper transport section. | |
| 10 | Paper feed roller (No. 3 paper feed tray) | Feeds paper to the paper transport section. | |
| 11 | Separation roller (No. 3 paper feed tray) | Separates paper to prevent against double-feed. | |
| 12 | Paper pickup roller (No. 3 paper feed roller) | Sends paper to the paper transport section. | |
| 13 | Paper feed roller (No. 4 paper feed tray) | Feeds paper to the paper transport section. | |
| 14 | Separation roller (No. 4 paper feed tray) | Separates paper to prevent against double-feed. | |
| 15 | Paper pickup roller (No. 4 paper feed roller) | Sends paper to the paper transport section. | |
| 16 | Resist roller (Drive) | Transports paper to the transfer section. / Controls the paper transport timing and adjusts the relative relationship between the image and paper. | |
| 17 | Resist roller (Idle) | Applies a pressure to paper and the resist roller to provide a transport power of the transport roller to paper. | |

| No. | Name | Function/Operation | NOTE |
|-----|-----------------------------|---|------|
| 18 | Transport roller 1 (Drive) | Transports paper fed from the large capacity tray (LCC) to the transport roller 2. | |
| 19 | Transport roller 1 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 20 | Transport roller 2 (Drive) | Transports paper transported from the manual paper feed and the transport roller 1 to the transport roller 3. | |
| 21 | Transport roller 2 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 22 | Transport roller 3 (Drive) | Transports paper transported from the paper feed tray 2 and the transport roller 2 to the transport roller 3. | |
| 23 | Transport roller 3 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 24 | Transport roller 4 (Drive) | Transports paper transported from the transport roller 3 to the transport roller 15. | |
| 25 | Transport roller 4 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 26 | Transport roller 5 (Drive) | Transports paper fed from the paper feed tray 4 to the transport rollers 6 and 7. | |
| 27 | Transport roller 5 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 28 | Transport roller 6 (Idle) | Reduces friction between paper and the paper guide. | |
| 29 | Transport roller 7 (Drive) | Transports paper transported from the transport roller 5 to the transport roller 10. | |
| 30 | Transport roller 7 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 31 | Transport roller 8 (Drive) | Transports paper transported from the paper feed tray 3 to the transport rollers 9 and 10. | |
| 32 | Transport roller 8 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 33 | Transport roller 9 (Idle) | Reduces friction between paper and the paper guide. | |
| 34 | Transport roller 10 (Drive) | Transports paper transported from the transport rollers 7 and 8 to the transport roller 11. | |
| 35 | Transport roller 10 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 36 | Transport roller 11 (Drive) | Transports paper transported from the transport roller 10 to the transport roller 13. | |
| 37 | Transport roller 11 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 38 | Transport roller 12 (Idle) | Reduces friction between paper and the paper guide. | |
| 39 | Transport roller 13 (Drive) | Transports paper fed from the paper feed trays 1, 3, and 4 to the transport roller 15. | |
| 40 | Transport roller 13 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 41 | Transport roller 14 (Idle) | Reduces friction between paper and the paper guide. | |
| 42 | Transport roller 15 (Drive) | Transports paper to the transport resist roller. | |
| 43 | Transport roller 15 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 44 | Transport roller 16 (Drive) | Transports paper from the fusing roller to the paper exit roller 1. | |
| 45 | Transport roller 16 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 46 | Transport roller 17 (Idle) | Reduces friction between paper and the paper guide. | |
| 47 | Transport roller 18 (Idle) | Reduces friction between paper and the paper guide. | |
| 48 | Transport roller 19 (Drive) | Transports paper transported from the paper exit roller 2 to the transport roller 20. | |
| 49 | Transport roller 19 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 50 | Transport roller 20 (Drive) | Transports paper transported from the transport roller 19 to the transport roller 21. | |
| 51 | Transport roller 20 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 52 | Transport roller 21 (Drive) | Transports paper transported from the transport roller 20 to the transport roller 15. | |
| 53 | Transport roller 21 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 54 | Transport roller 22 (Idle) | Reduces friction between paper and the paper guide. | |
| 55 | Paper exit roller 1 (Drive) | Discharges paper to the paper exit tray. / Switches back paper. | |

| No. | Name | Function/Operation | NOTE |
|-----|-----------------------------------|---|------|
| 56 | Paper exit roller 1 (Idle) | Applies a pressure to paper and the paper exit roller to provide a transport power of the paper exit roller to paper. | |
| 57 | Paper exit roller 2 (Drive) | Discharges paper. / Transports paper to the duplex (ADU) section. | |
| 58 | Paper exit roller 2 (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the paper exit roller to paper. | |
| 59 | Transfer drive roller (Drive) | Drives the transfer belt. | |
| 60 | Transfer roller (Idle) | Helps to hold the transfer belt. | |
| 61 | Fusing roller (Pressing) | Applies a pressure to the fusing roller (heating). | |
| 63 | Sub heat roller | Heats the fusing roller (pressing). | |
| 65 | Fusing roller (Heating) | Heat and press toner onto paper to fuse images. | |
| 66 | Paper feed roller (SPF) | Feeds paper to the paper transport section. | |
| 67 | Separation roller (SPF) | Separates paper to prevent against double feed. | |
| 68 | Paper pickup roller (SPF) | Sends paper to the paper feed roller. | |
| 69 | Transport roller 1 (Drive) (SPF) | Transports paper (which is transported by the first resist roller) to the second resist roller. | |
| 70 | Transport roller 1 (Idle) (SPF) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 71 | First resist roller (Drive) (SPF) | Controls the paper transport timing. / Adjusts paper to be horizontal. | |
| 72 | First resist roller (Idle) (SPF) | Applies a pressure to paper and the resist roller to provide a transport power of the resist roller to paper. | |
| 73 | Transport roller 2 (Drive) (SPF) | Transports paper transported from the paper exit roller 1 to the transport roller 3. | |
| 74 | Transport roller 2 (Idle) (SPF) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 75 | First resist roller (Drive) (SPF) | Controls the paper transport timing. / Adjusts paper to be horizontal. | |
| 76 | First resist roller (Idle) (SPF) | Applies a pressure to paper and the resist roller to provide a transport power of the resist roller to paper. | |
| 77 | Paper exit roller (Drive) (SPF) | Discharges paper. | |
| 78 | Paper exit roller (Idle) (SPF) | Applies a pressure to paper and the paper exit roller to provide a transport power of the paper exit roller to paper. | |
| 79 | Transfer cleaning roller | Cleans the transfer belt. | |
| 80 | Transfer tension roller | Applies a proper tension to the transfer belt. | |
| 81 | Transfer roller | Applies a proper voltage to the transfer belt. | |
| 82 | Transfer roller 1A (Drive) | Transports paper (which is fed from the manual paper feed tray) to the transport roller. | |
| 83 | Transfer roller 1A (Idle) | Applies a pressure to paper and the transport roller to provide a transport power of the transport roller to paper. | |
| 84 | Cleaning brush roller | Removes paper dust from the photoconductor drum. | |

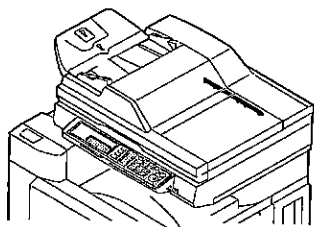
O. Filter



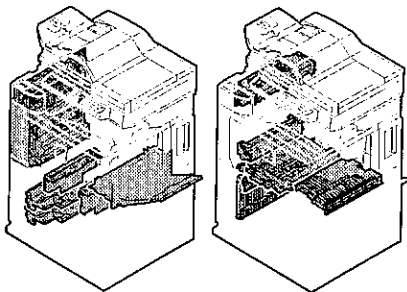
| No. | Name | Function/Operation | MODEL | NOTE |
|-----|--------------|---|-------|------|
| 1 | Ozone filter | Absorbs ozone generated in the image process section. | | |
| 2 | Toner filter | Filters dispersed toner in the process section. | | |

[6] DETAILS OF EACH SECTION

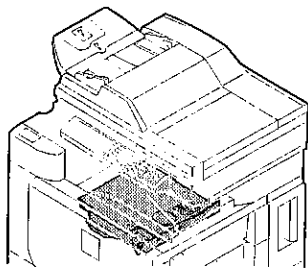
1. Operation panel section



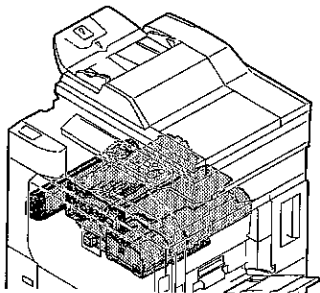
2. Paper feed, paper transport, duplex, and paper exit reverse sections



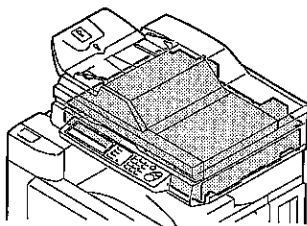
3. Laser scan unit (LSU)



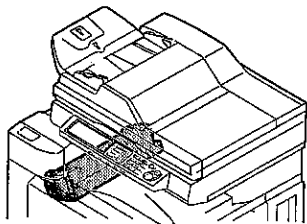
4. Image process section



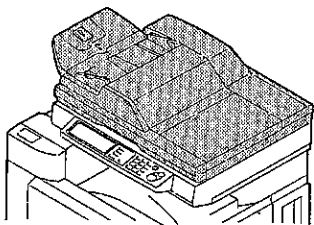
5. Scanner section



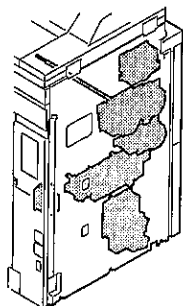
6. Fusing section



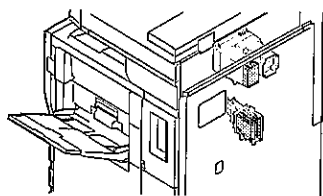
7. SPF section



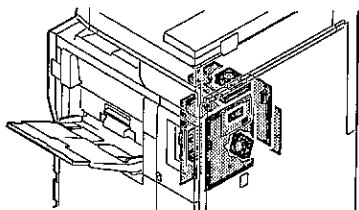
8. Drive section



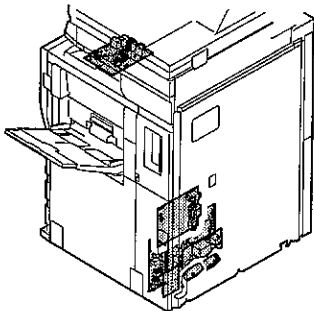
9. Filters



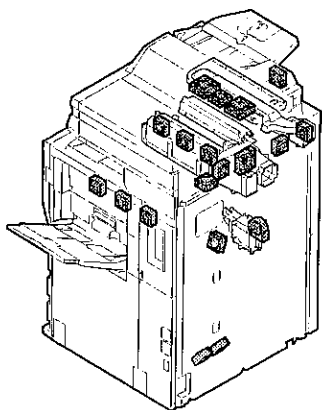
10. PWB section



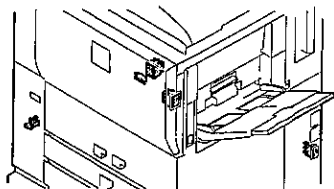
11. Power section



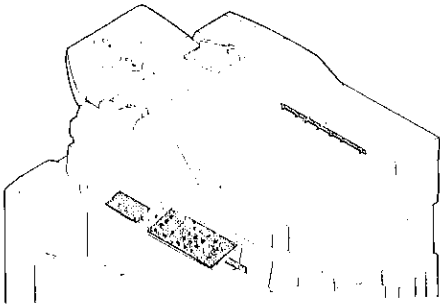
12. Fan motors



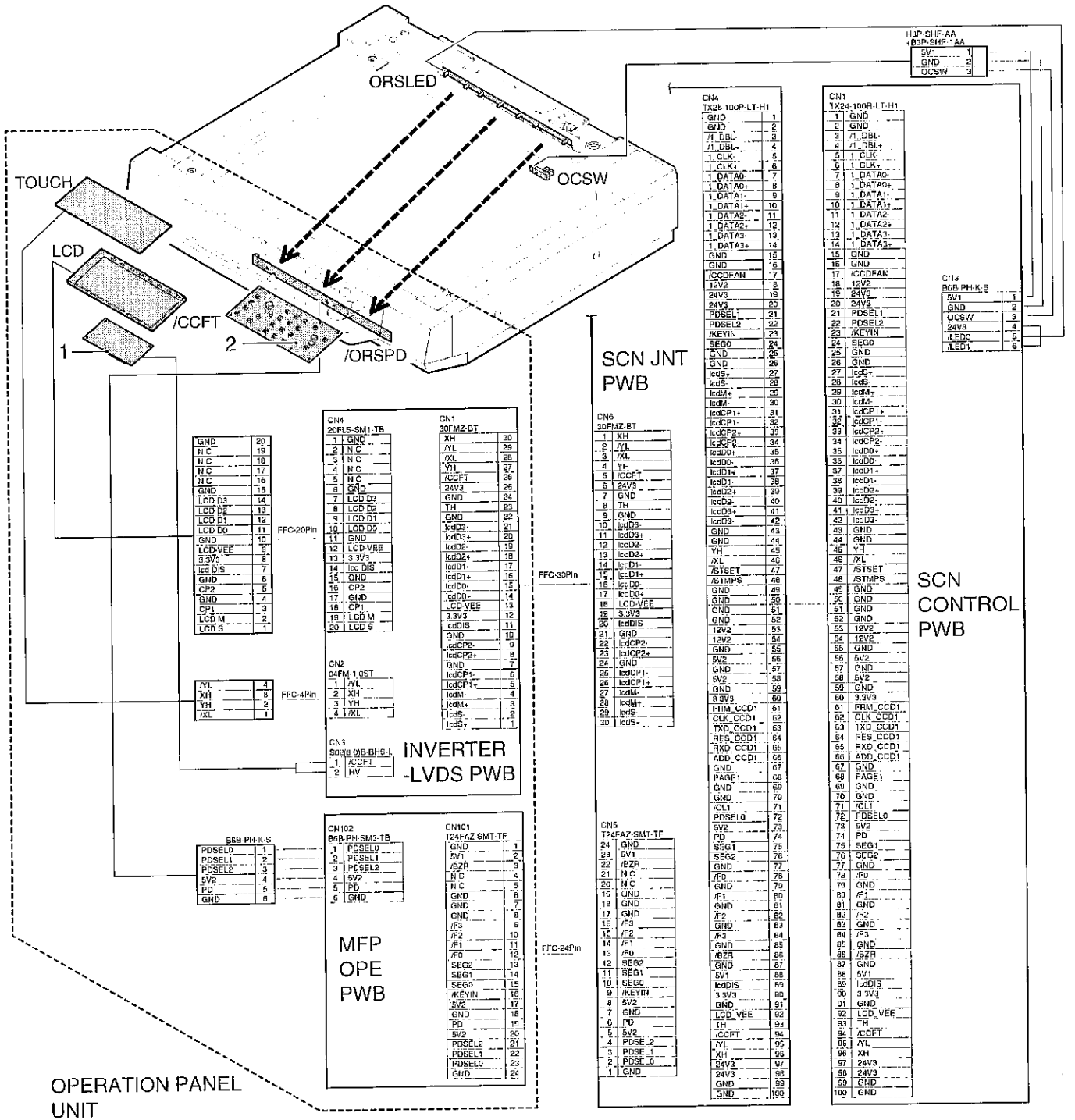
13. Sensors and switches



1. Operation panel section



B. Major parts and signal functions



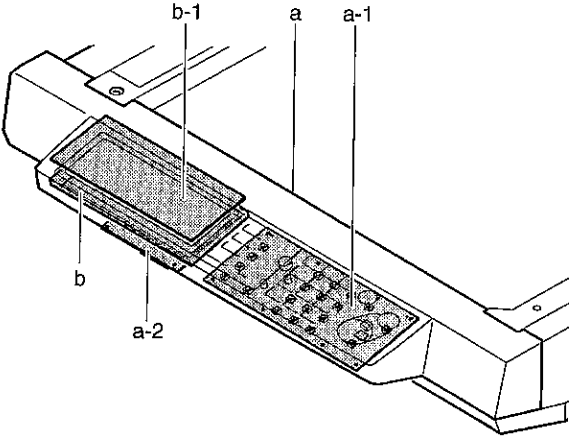
| Code | Signal name | Name | Function/Operation | Type | Model | Note |
|--------|-------------|---|--|-------------------|-------|--------|
| LCD | | LCD unit | Display the each memu and the information. | | | |
| TOUCH | | Touch panel | Various adjustments and setting operation are performed. | | | |
| ORSLED | | Document size detection light emitting PWB | Generates the document size detection signal. | | | |
| ORSPD | | Document size detection light receiving PWB | Generates the document size detection signal. | | | |
| OCSW | OCSW | SPF open/close detector | Document size detection trigger | Transmission type | | Sensor |
| /CCFT | /CCFT | LCD backlight | LCD backlight | CCFT cool CRT | | |

| No. | Name | Function |
|-----|-----------------------|--|
| 1 | LVDS/INV PWB | Generates the LCD display signal and a high voltage for the backlight. |
| 2 | Operation control PWB | Controls the display operation panel. |

C. Maintenance and parts replacement

(List of Replacement Parts)

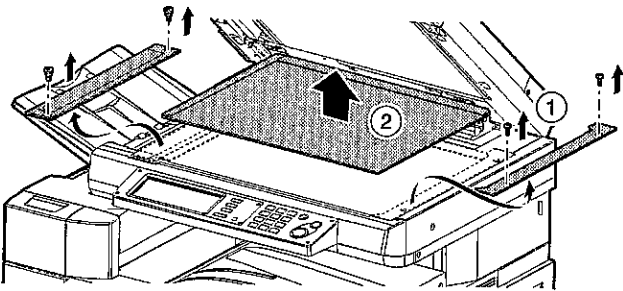
| No. | Unit | Parts |
|-----|----------------------|-------------------------|
| a | Operation panel unit | 1 Operation control PWB |
| | | 2 LVDS/INV PWB |
| b | LCD unit | 1 Touch panel |



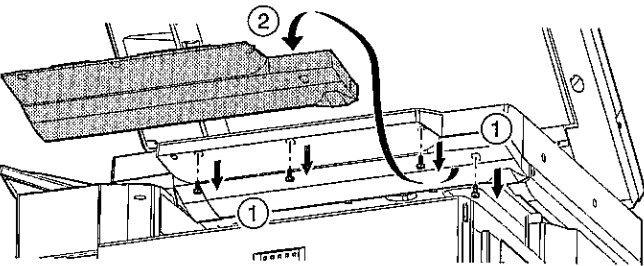
(1) Maintenance and parts replacement

a. Operation panel unit

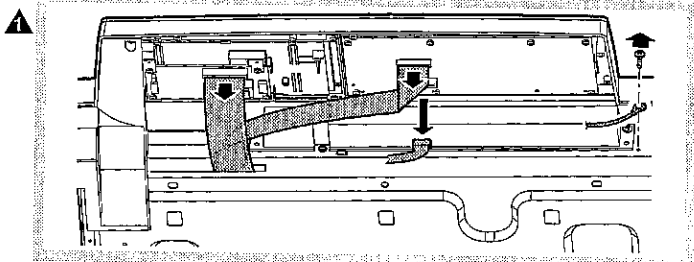
1) Remove the table glass.



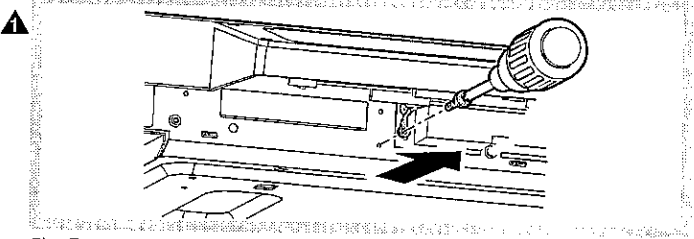
2) Remove the operation section cover.



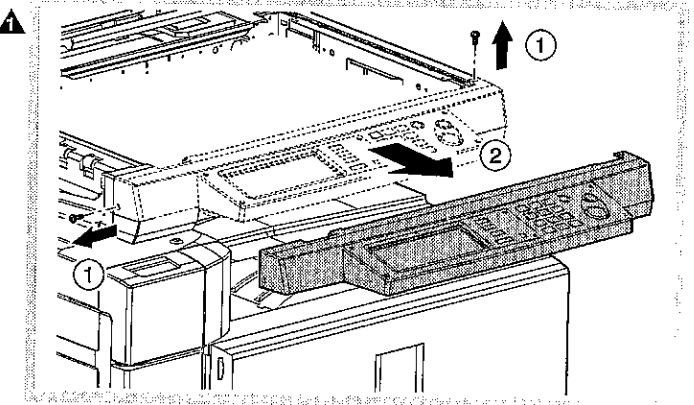
3) Remove each cable.



4) Remove the ground lead.

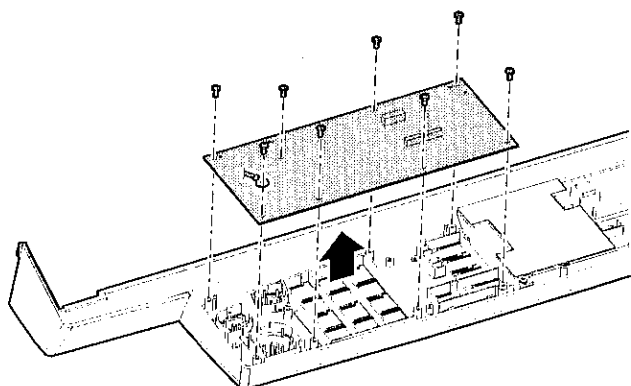


5) Remove the operation panel unit.



a-1. Operation control PWB

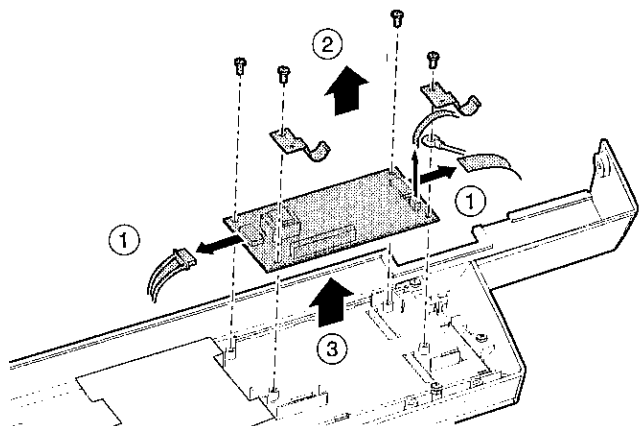
- 1) Remove the operation panel unit. (See "a. Operation panel unit")
- 2) Remove the ground lead.



- 3) Remove the operation control PWB.

a-2. LVDS/INV PWB

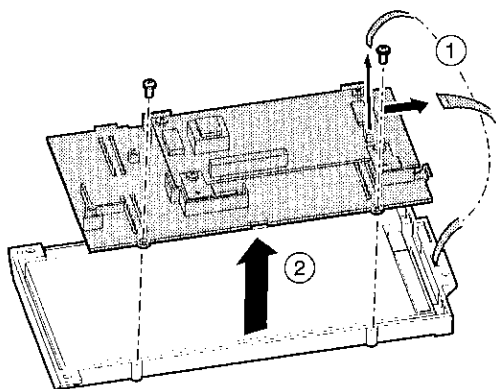
- 1) Remove the operation panel unit. (See "a. Operation panel unit")
- 2) Remove the ground lead.



- 3) Remove each cable.
- 4) Remove the LVDS/INV PWB.

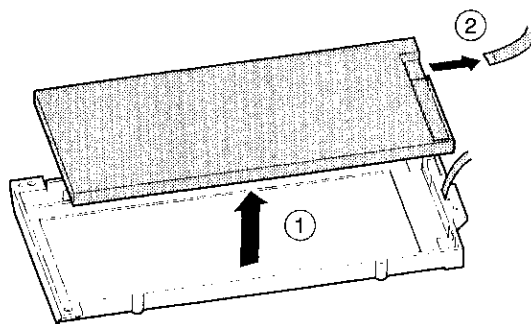
b. LCD unit

- 1) Remove the operation panel unit. (See "a. Operation panel unit")
- 2) Remove each cable.



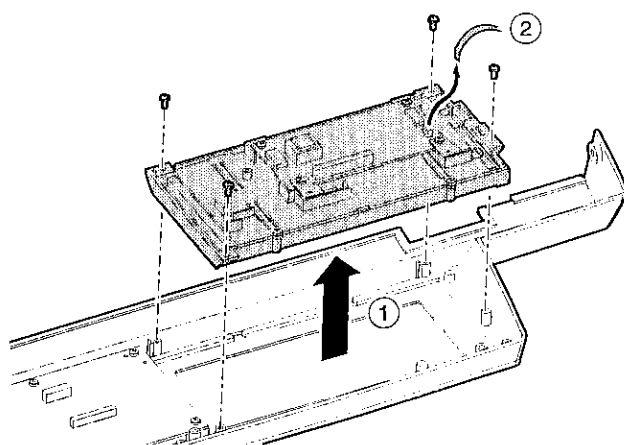
- 3) Remove the LCD cover.

- 4) Remove the LCD unit.

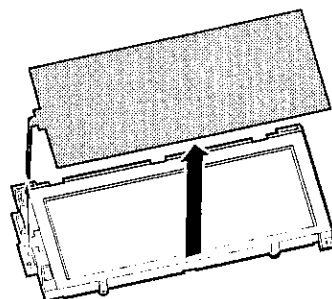


b-1. Touch panel

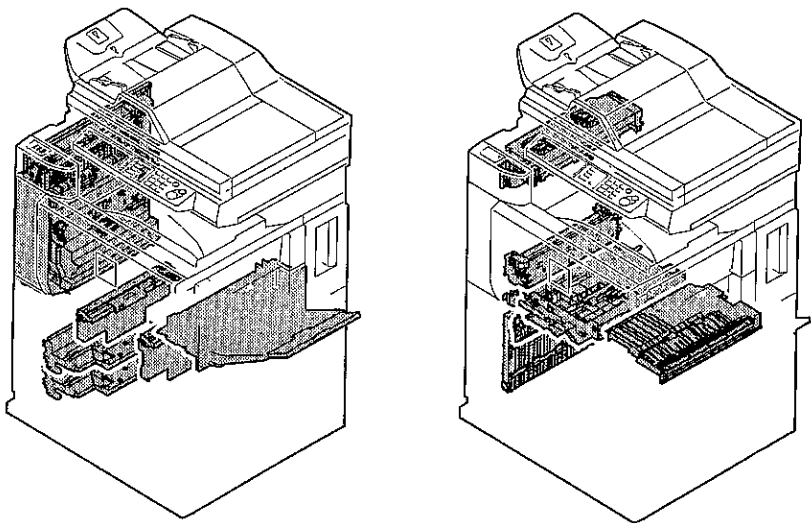
- 1) Remove the operation panel unit. (See "a. Operation panel unit")
- 2) Remove the LCD unit.



- 3) Remove the flat cable.
- 4) Remove the touch panel.



2. Paper feed, paper transport, duplex, and paper exit reverse sections



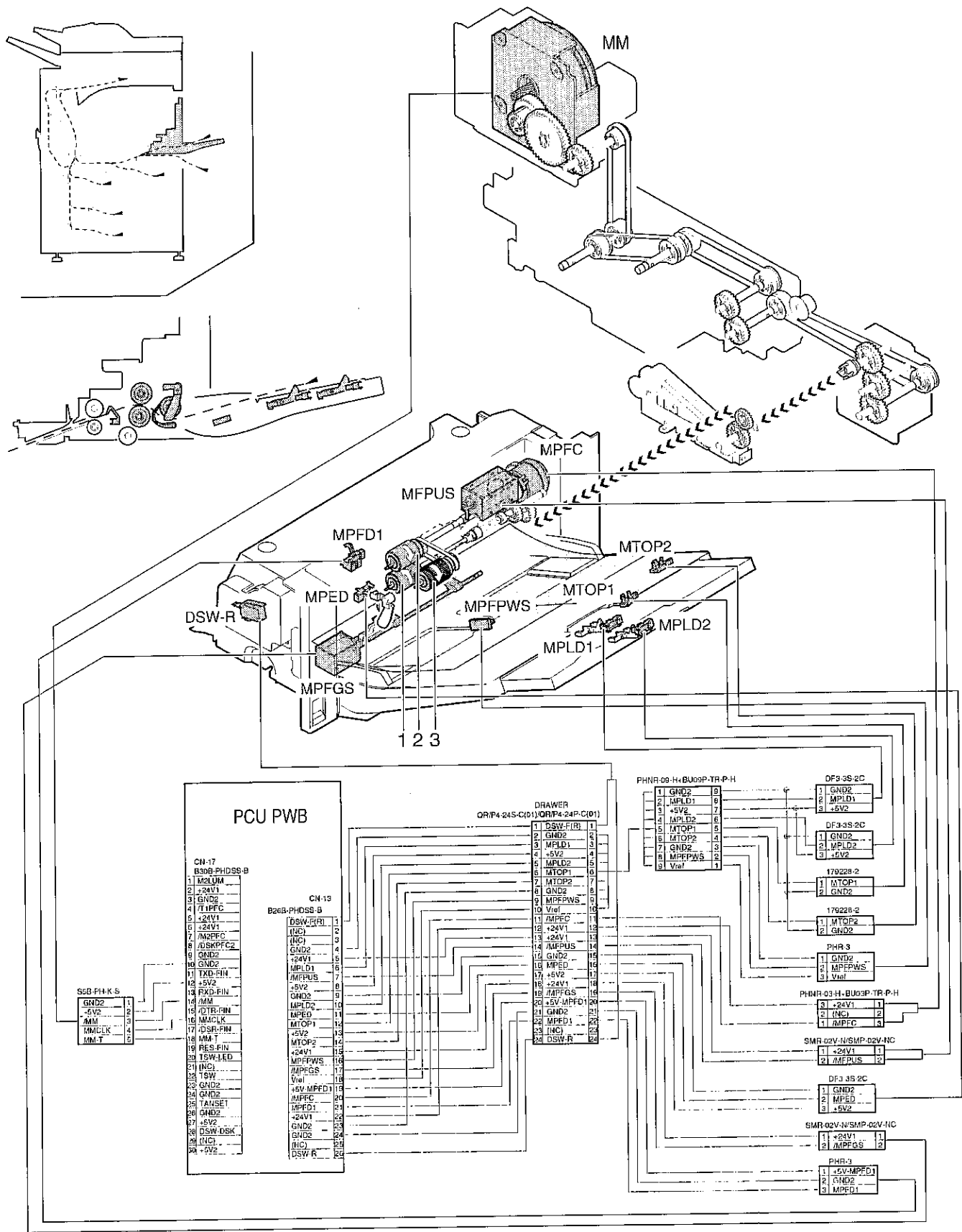
[Paper feed section]

General

The paper feed tray 1 holds 900 sheets, the paper feed tray 2 holds 1,300 sheets, the multi-purpose paper feed tray 3 holds 500 sheets, the paper feed tray 4 holds 500 sheets, and the manual paper feed tray holds 100 sheets. Those paper feed units are standard provisions.

(Manual paper feed section)

A. Major parts and signal functions



| Code | Signal name | Name | Function/Operation | Type | Model | Note |
|--------|-------------|---|---|--------------------------|-------|-------------------------------|
| MPED | MPED | Manual feed paper empty detector | Manual paper feed tray paper empty detection | Transmission type | | Manual paper feed unit |
| MPFD1 | MPFD1 | Manual feed paper pass detector 1 | Manual tray paper pass detection | Transmission type | | Paper transport system sensor |
| MPFPWS | MPFPWS | Manual feed paper width detector | Manual feed paper width detection | Volume resistor | | Analog detector |
| MPLD1 | MPLD1 | Manual feed paper length detector 1 | Manual paper feed tray paper length detection (Paper feed side) | Transmission type | | Manual paper feed unit |
| MPLD2 | MPLD2 | Manual feed paper length detector 2 | Manual paper feed tray paper length detection (Outside) | Transmission type | | Manual paper feed unit |
| MTOP1 | MTOP1 | Manual tray pull-out position detector 1 | Manual paper feed tray pull-out position detection (Storing position) | Contact type | | Manual paper feed unit |
| MTOP2 | MTOP2 | Manual tray pull-out position detector 2 | Manual paper feed tray pull-out position detection (Pull-out position) | Contact type | | Manual paper feed unit |
| DSW-R | DSW-R | Manual feed unit open/close detector | Manual paper feed unit open/close detection, main charger power/developing bias power line open/close | Micro switch | | |
| MPFC | MPFC | Paper feed clutch (Manual paper feed) | Manual paper feed section paper feed roller ON/OFF control | Electromagnetic clutch | | |
| MFPUS | MFPUS | Paper pickup solenoid (Manual paper feed) | Presses the paper pickup roller onto paper. | Electromagnetic solenoid | | |
| MPFGS | MPFGS | Manual paper feed gate solenoid | Manual feed gate solenoid open/close control | Electromagnetic solenoid | | |

| No. | Name | Function |
|-----|--|---|
| 1 | Separation roller (Manual paper feed tray) | Separates paper to prevent against double feed. |
| 2 | Paper feed roller (Manual paper feed tray) | Feeds paper to the paper transport section. |
| 3 | Paper pickup roller (Manual paper feed tray) | Sends paper to the paper feed roller. |
| 4 | Torque limiter | A fixed level of resistance is applied to the paper separation roller to prevent against double feed. |

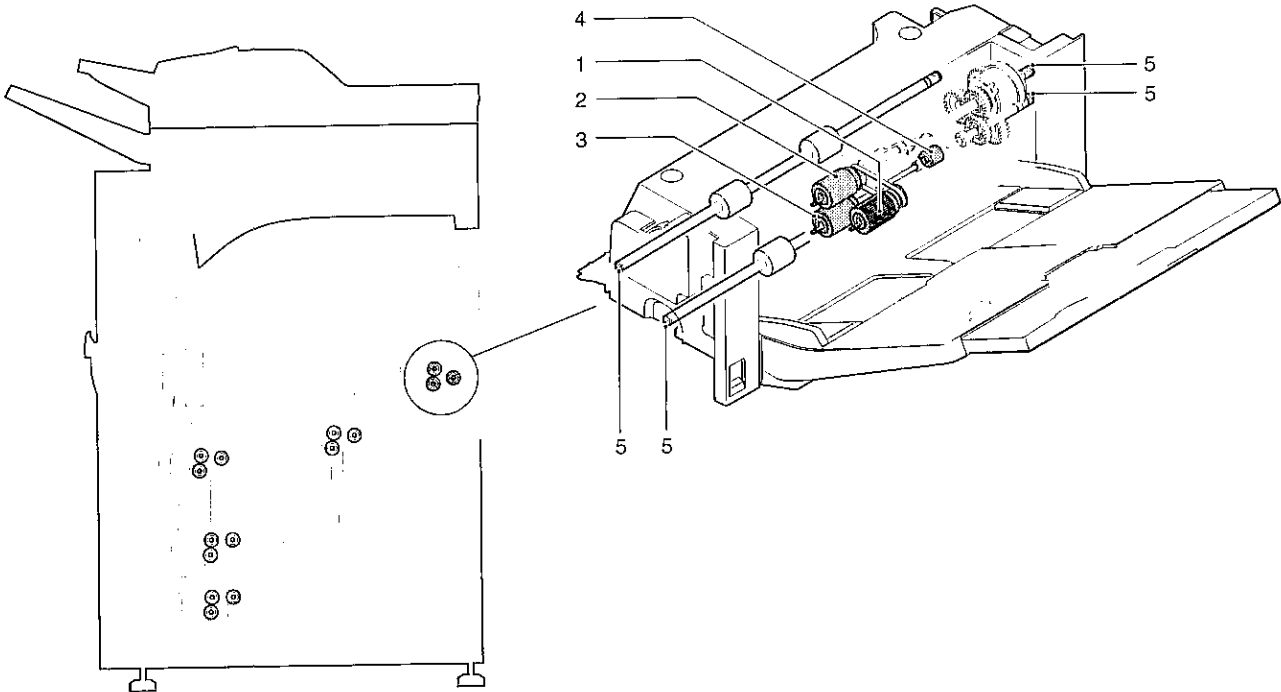
B. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| Unit name | No. | Part name | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|-------------------------|-----|---------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|---------------|
| | | | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Multi manual paper feed | 1 | Pickup roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 2 | Paper feed roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 3 | Separation roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 4 | Torque limiter | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 5 | Shaft (Conduction grease) | × | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | UKOG-0012QSZZ |

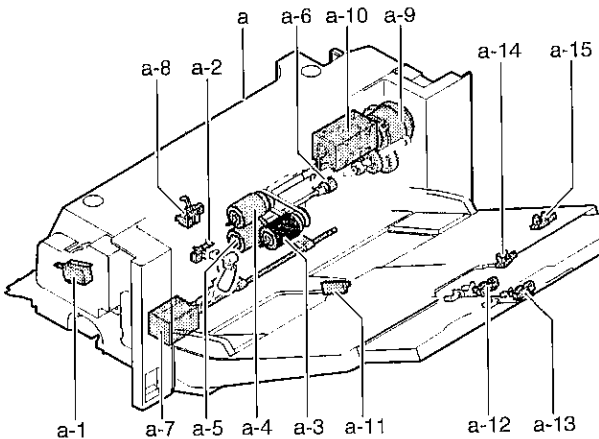
(Note 1) Replacement reference: For replacement, refer to each paper feed port counter value.
Manual paper feed: 100K or 1 year
Torque limiter : 800K (However, 400K for manual paper feed section)



(2) Maintenance and parts replacement

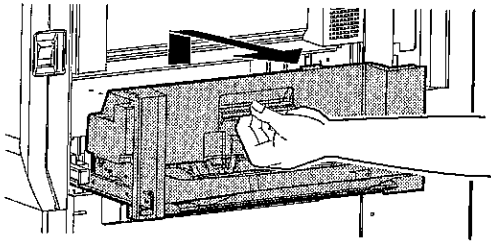
(List of Replacement Parts)

| No. | Unit | Parts |
|-----|-----------------------------------|---|
| a | Multi manual paper feed tray unit | 1 Manual paper feed unit open/close switch |
| | | 2 Manual feed empty detector |
| | | 3 Pickup roller |
| | | 4 Paper feed roller |
| | | 5 Separation roller |
| | | 6 Torque limiter |
| | | 7 Manual feed gate solenoid |
| | | 8 Manual feed paper pass detector 1 |
| | | 9 Paper feed clutch |
| | | 10 Paper pickup solenoid |
| | | 11 Manual feed paper width size detection PWB |
| | | 12 Manual feed paper length detector 1 |
| | | 13 Manual feed paper length detector 2 |
| | | 14 Manual tray pull-out position detector 1 |
| | | 15 Manual tray pull-out position detector 2 |

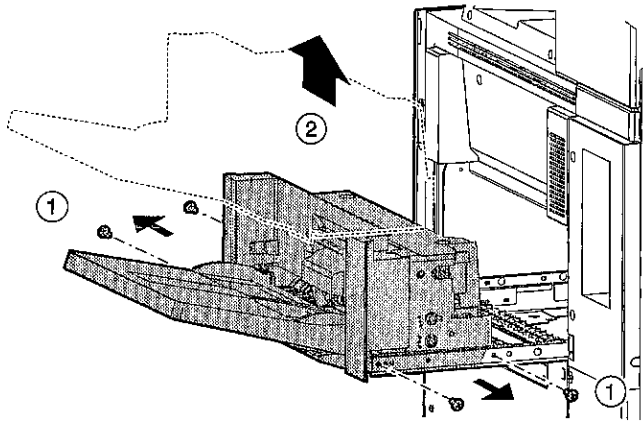


a. Multi manual paper feed tray unit

- 1) Pull out the multi manual paper feed tray unit.

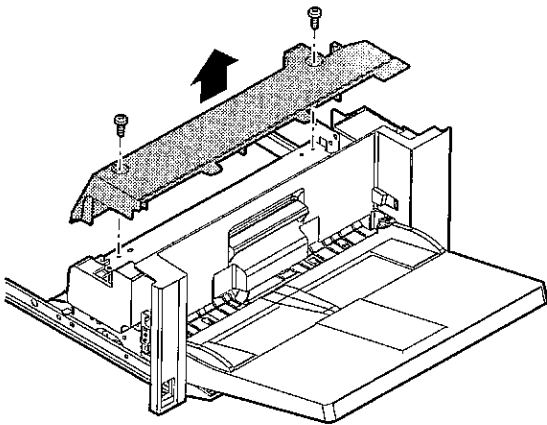


- 2) Remove the multi manual paper feed tray unit from the right and left accurides.

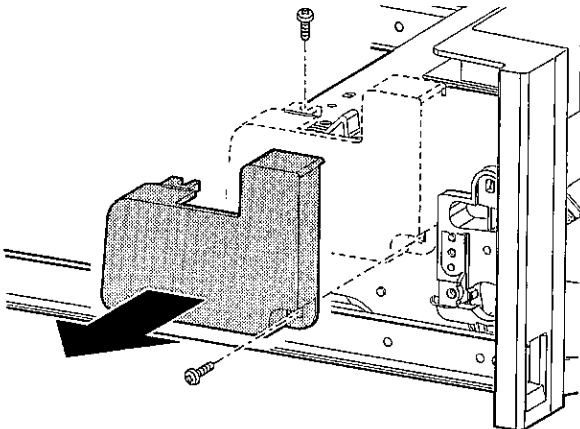


a-1. Manual paper feed unit open/close switch

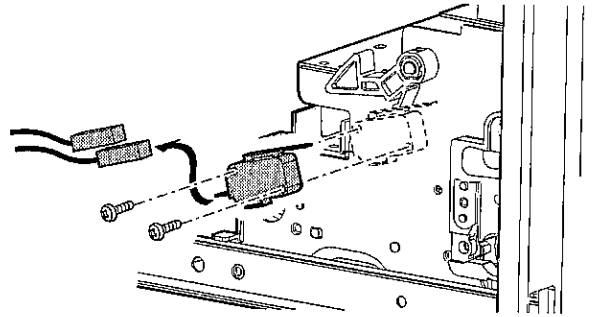
- 1) Pull out the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
- 2) Remove the manual feed upper cover.



- 3) Remove the manual feed front cover.

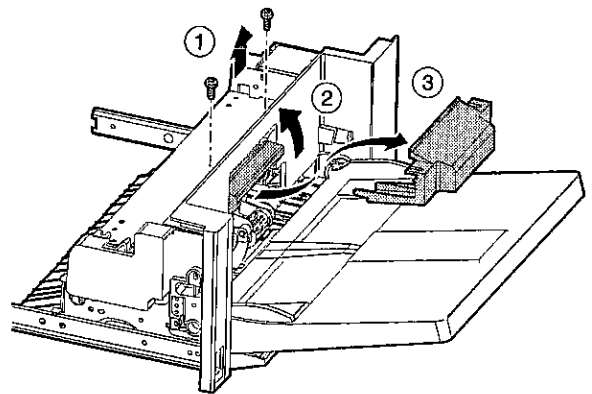


- 4) Remove the manual paper feed unit open/close switch.

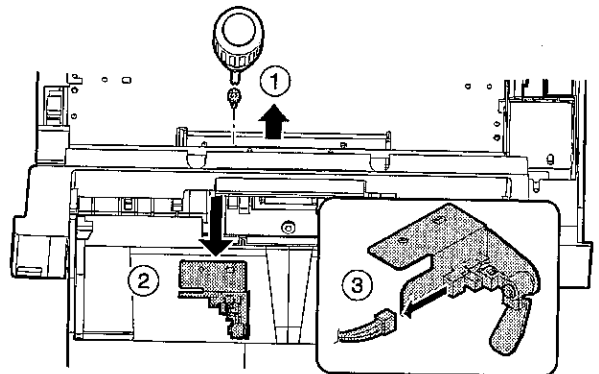


a-2. Manual feed empty detector

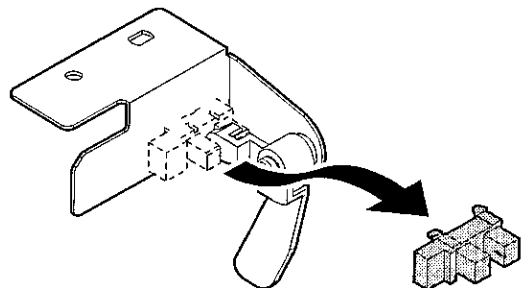
- 1) Pull out the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
- 2) Remove the manual feed upper cover. (See "a-1. Manual paper feed unit open/close switch")
- 3) Remove the pickup cover.



- 4) Remove the actuator unit.



- 5) Remove the manual feed empty detector.

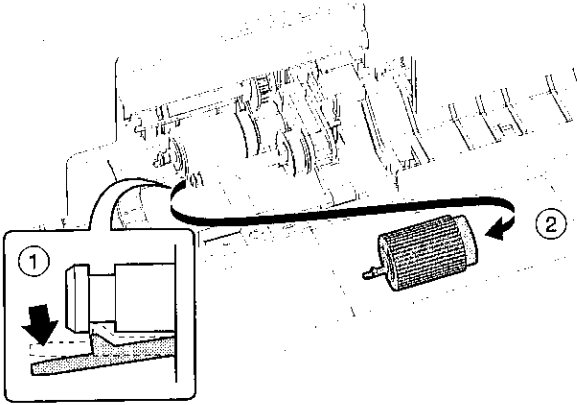


a-3. Pickup roller

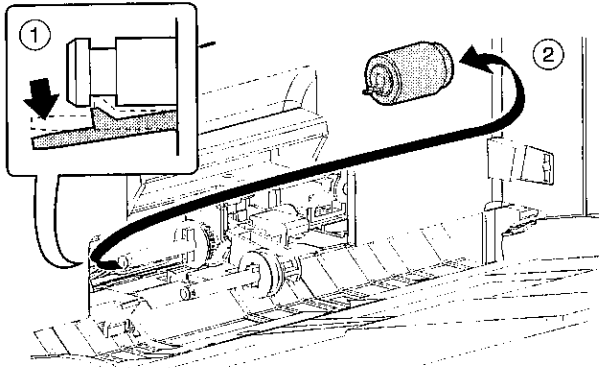
a-4. Paper feed roller

a-5. Separation roller

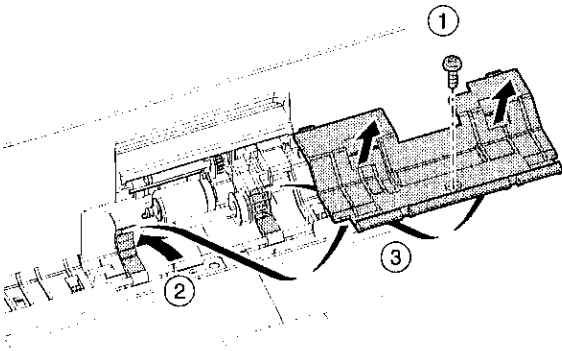
- 1) Pull out the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
- 2) Remove the actuator unit. (See "a-3. Pickup roller")
- 3) Unhook the claw to remove the pickup roller.



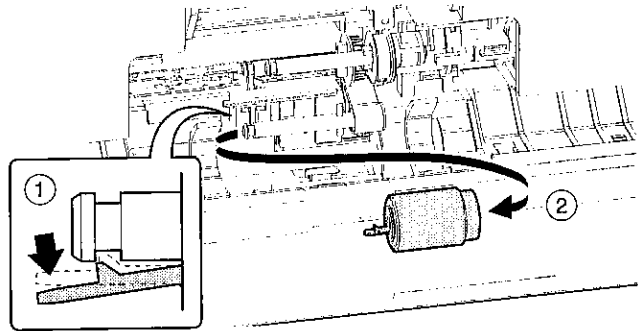
- 4) Unhook the claw to remove the paper feed roller.



- 5) Remove the separation roller cover.

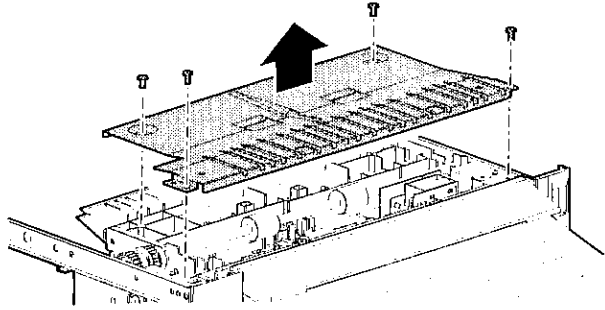


- 6) Remove the separation roller.

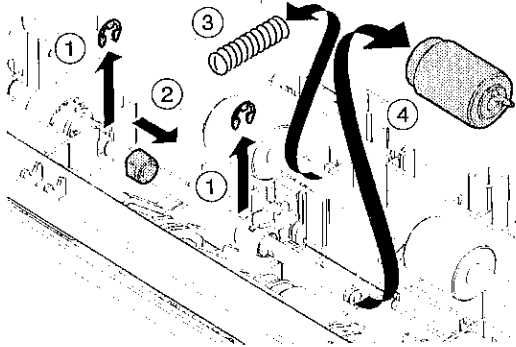


a-6. Torque limiter

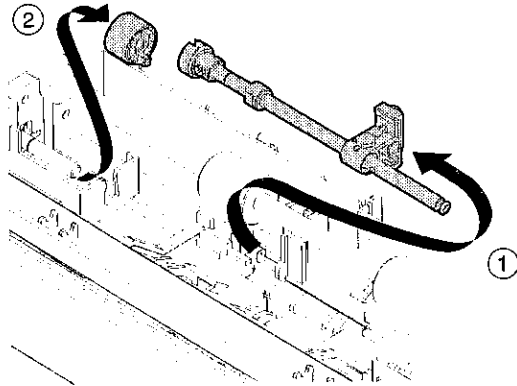
- 1) Pull out the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
- 2) Remove the bottom cover.



- 3) Remove the separation roller.

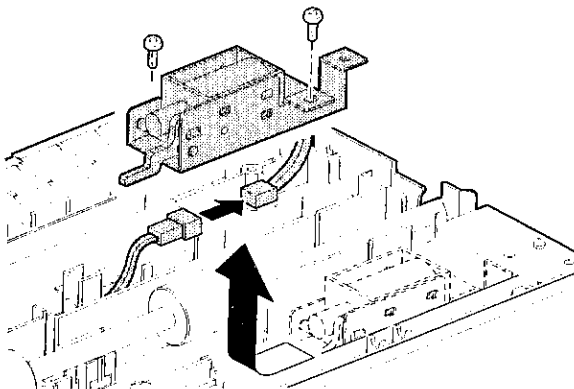


- 4) Remove the separation roller shaft, and remove the torque limiter.

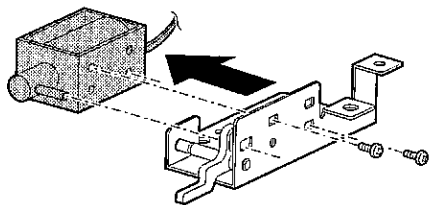


a-7. Manual feed gate solenoid

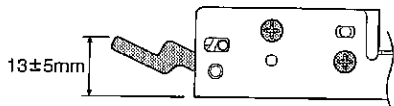
- 1) Remove the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
- 2) Remove the bottom cover. (See "a-6. Torque limiter")
- 3) Disconnect the connector, and remove the manual paper feed gate solenoid unit.



- 4) Remove the manual feed gate solenoid.

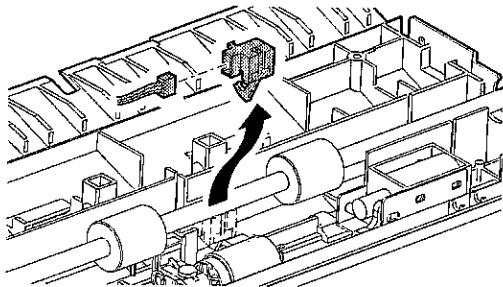


- ▲ When assembling, tighten the screw so that the lever tip is at $13 \pm 0.5\text{mm}$ from the frame edge with the solenoid plunger pulled.



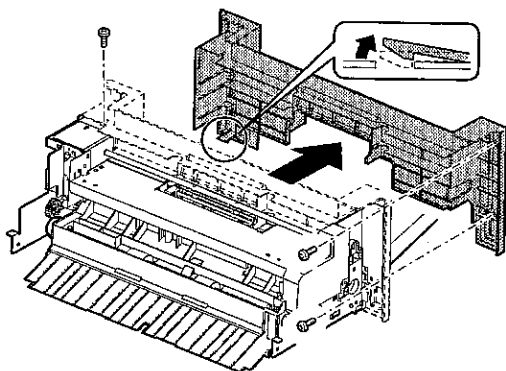
a-8. Manual feed paper pass detector 1

- 1) Remove the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
- 2) Remove the bottom cover. (See "a-6. Torque limiter")
- 3) Disconnect the connector, and remove the manual paper feed paper pass detector 1.

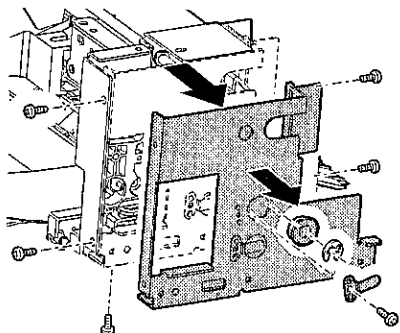


a-9. Paper feed clutch

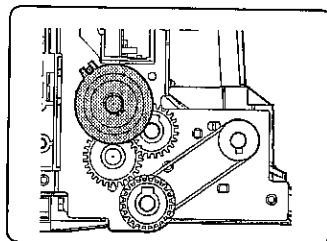
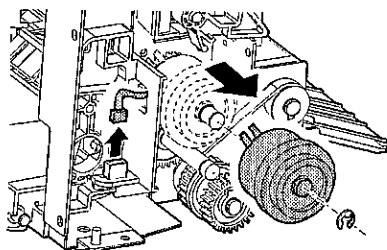
- 1) Remove the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
- 2) Remove the upper cover. (See "a-3. Pickup roller")
- 3) Remove the front cover.



- 4) Remove the interface pass earth plate, the E-ring, and the bearing, and remove the manual paper feed mounting plate.



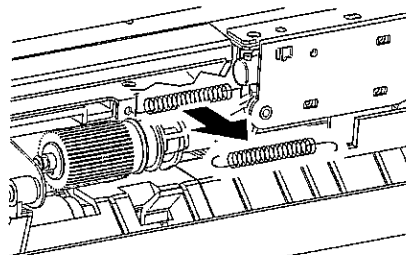
- 5) Remove the connector and the E-ring, and remove the paper feed clutch.



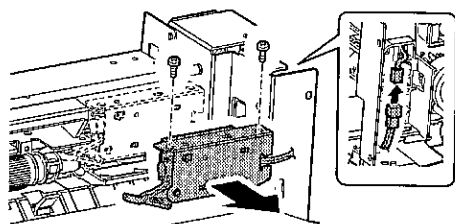
- * When assembling, fit the rotation stopper of the paper feed clutch with the clutch fixing screw.

a-10. Paper pickup solenoid

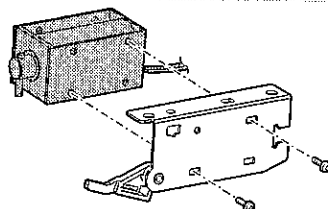
- 1) Remove the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
- 2) Remove the manual paper feed upper cover and the pickup upper cover. (See "a-3. Pickup roller")
- 3) Remove the front cover, and remove the manual paper feed mounting plate. (See "a-9. Paper feed clutch")
- 4) Remove the spring.



- 5) Disconnect the connector, and remove the paper pickup solenoid unit.

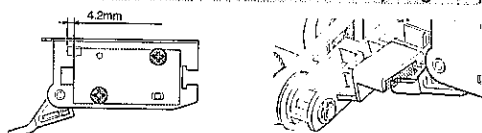


- 6) Remove the paper pickup solenoid.



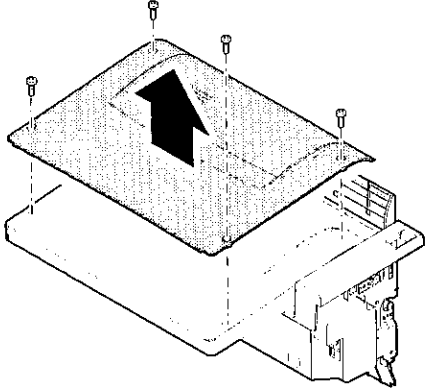
(Note for assembly)

Check that there is a clearance when the solenoid plunger is pulled.

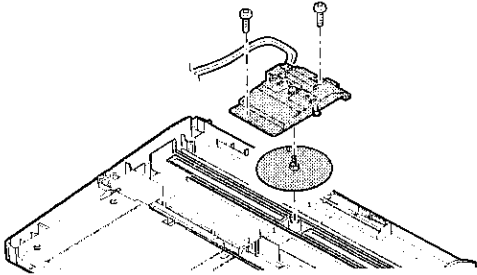


a-11. Manual feed paper width size detection PWB

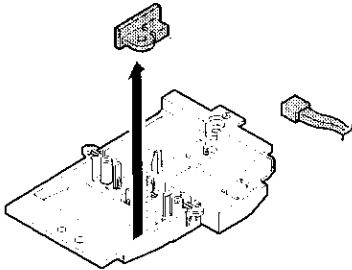
- 1) Remove the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
- 2) Remove the multi tray 250 lower.



- 3) Remove the width detection mounting plate.



- 4) Remove the pawl and the connector, and remove the manual paper feed VR PWB.



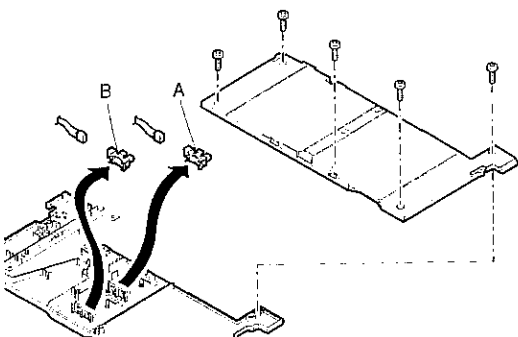
a-12. Manual feed paper length detector 1

a-13. Manual feed paper length detector 2

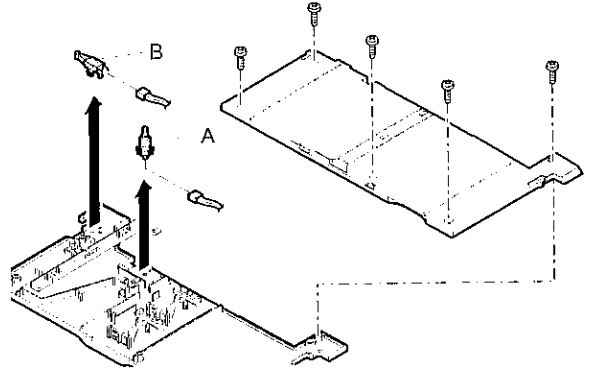
a-14. Manual tray pull-out position detector 1

a-15. Manual tray pull-out position detector 2

- 1) Remove the multi manual paper feed tray unit. (See "a. Multi manual paper feed tray unit")
- 2) Remove the multi tray 250 lower. (See "a-11. Manual feed paper width size detection PWB")
- 3) Remove the manual paper feed tray lower.
- 4) Disconnect the connector, and remove the manual paper feed length detector 1 (A) and the manual paper feed length detector 2 (B).

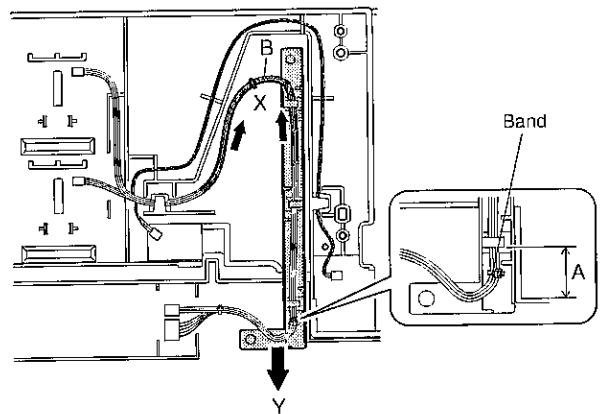


- 5) Disconnect the connector, and remove the manual paper feed tray pull-out position detector 1 (A) and the manual paper feed tray pull-out position detector 2 (B).

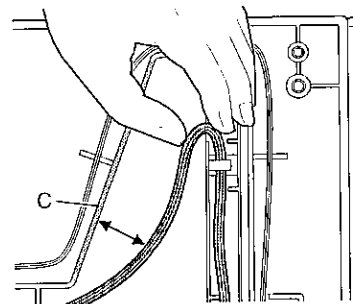


▲ [Others]

- 1) Slide the harness holder in the direction of Y and install it. The band must be in the range of A. Pull section B in the arrow direction to give a slack to the harness.

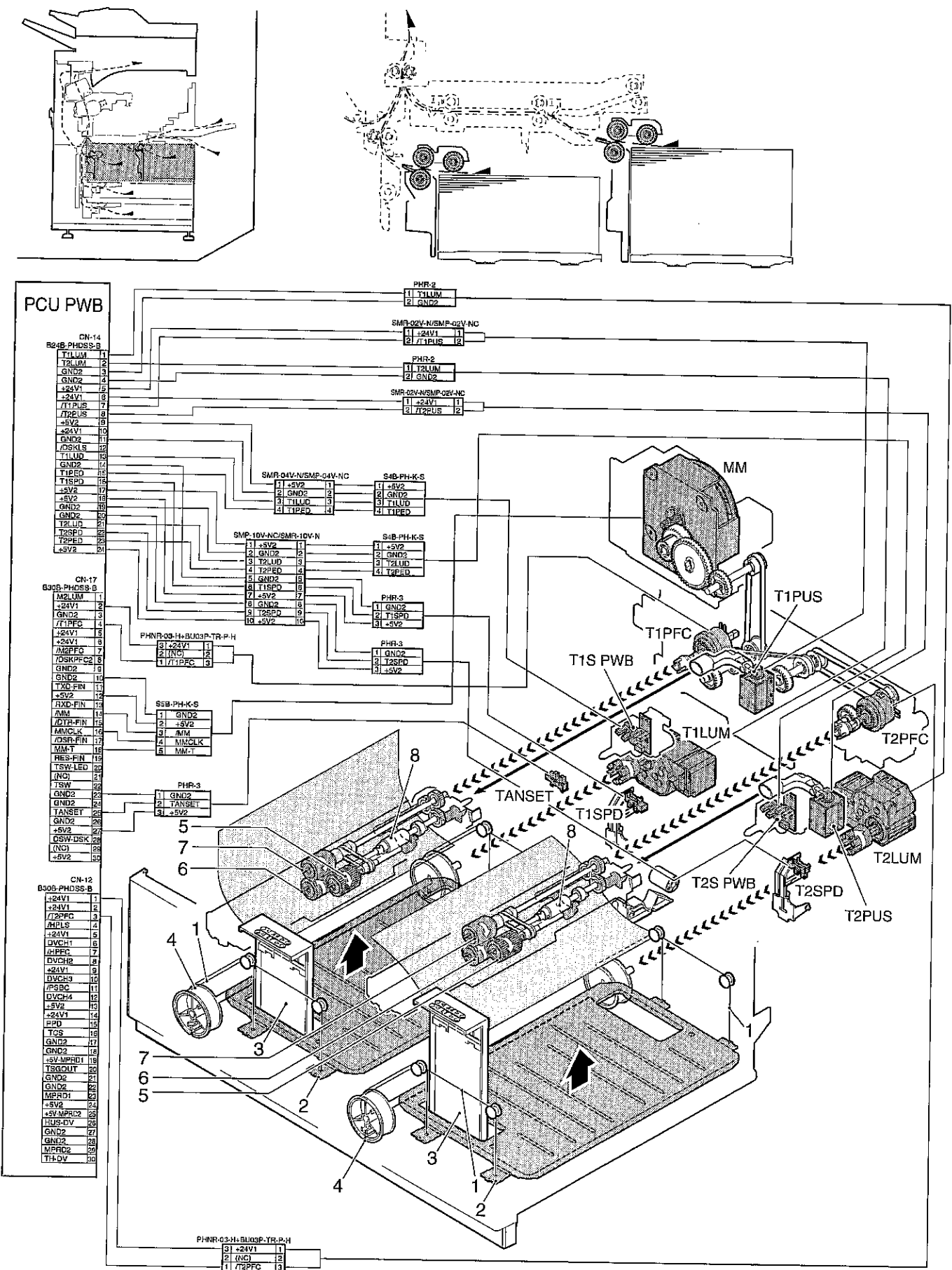


- 2) Fold the harness with your fingers and check that the harness keeps the folded shape along the holder when it is released. Rib C must be separated from the harness.



(Paper feed tray sections 1 and 2)

A. Major parts and signal functions



| Code | Signal name | Name | Function/Operation | Type | Model | Note |
|---------|-------------|---|--|--------------------------|-------|---|
| T1SPD | T1SPD | Paper remaining quantity detector (Paper feed tray 1) | Paper remaining quantity detection (Paper feed tray 1) | Transmission type | | Paper feed tray remaining quantity sensor |
| T2SPD | T2SPD | Paper remaining quantity detector (Paper feed tray 2) | Paper remaining quantity detection (Paper feed tray 2) | Transmission type | | Paper feed tray remaining quantity sensor |
| TANSET | TANSET | Paper feed tray 1/2 (Tandem tray) detection signal | Paper feed tray 1, 2 (Tandem tray) insertion detection | Transmission type | | Paper feed tray system sensor |
| T1PFC | T1PFC | Paper feed clutch (Paper feed tray 1) | Paper feed tray 1 section roller ON/OFF control | Electromagnetic clutch | | |
| T2PFC | T2PFC | Paper feed clutch (Paper feed tray 2) | Paper feed tray 2 section roller ON/OFF control | Electromagnetic clutch | | |
| T1LUM | T1LUM | Paper feed tray lift-up motor (Paper feed tray 1) | Drives the lift plate of the paper feed tray. | DC brush motor | | Selection of Rotation mode/ Brake mode |
| T2LUM | T2LUM | Paper feed tray lift-up motor (Paper feed tray 2) | Drives the lift plate of the paper feed tray. | DC brush motor | | Selection of Rotation mode/ Brake mode |
| T1PUS | T1PUS | Paper pickup solenoid (Paper feed tray 1) | Presses the paper pickup roller onto paper. | Electromagnetic solenoid | | |
| T2PUS | T2PUS | Paper pickup solenoid (Paper feed tray 2) | Presses the paper pickup roller onto paper. | Electromagnetic solenoid | | |
| MM | MM | Main motor | Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section. | DC brushless motor | | Paper pass |
| T1S PWB | T1S PWB | Defector PWB (Paper feed tray 1) | Paper tray upper limit detection and paper empty detection (Paper feed tray 1) | | | |
| T2S PWB | T2S PWB | Defector PWB (Paper feed tray 2) | Paper tray upper limit detection and paper empty detection (Paper feed tray 2) | | | |

| No. | Name | Function |
|-----|---|---|
| 1 | Lift wire | Transmits drive power of the paper feed tray lift motor to the paper feed tray. |
| 2 | Paper feed table | Paper is put on this table. |
| 3 | Paper feed tray unit 1, 2 regulation plates L/R | Regulates the paper width to restrict skew to the minimum. |
| 4 | Pulley | Transmits drive power of the paper feed tray lift motor to the paper feed tray. |
| 5 | Paper pickup roller | Sends paper to the paper feed roller. |
| 6 | Separation roller | Separates paper to prevent against double feed. |
| 7 | Paper feed roller | Feeds paper to the paper transport section. |
| 8 | Torque limiter | |

B. Operational descriptions

(1) Paper feed operation

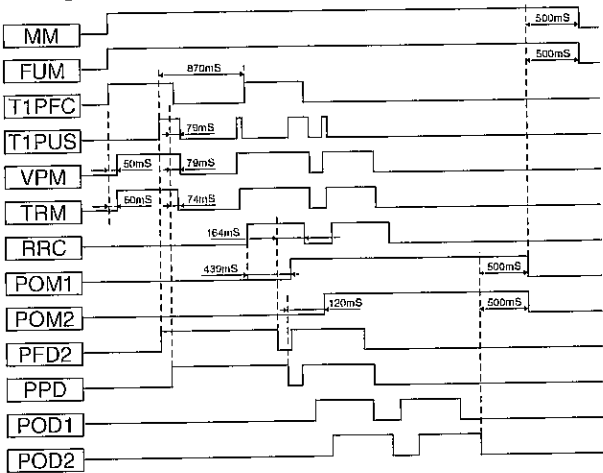
a. Preliminary operation before paper feed

- 1) Set paper in the tray, and insert the tray into the machine. The tray sensor turns on.
- 2) The lift-up motor operates to lift the tray.
- 3) The paper upper limit sensor turns on to stop the tray at the specified position.

b. Paper feed operation

- 1) When copy/print operation is started, the motors (MM, FUM, VPM, and TRM) and the clutch (TRC) are turned on to turn on the solenoid (T1PUS) at the timing of paper pickup. This rotates and falls the take-up roller to pick up paper.

- 2) At the same time, the paper feed roller rotates to feed paper to the transport section. At that time, the separation roller rotates to prevent against double feed of paper.



(2) Each paper feed tray paper size detection method

a. Paper feed tray 1, 2

The paper feed tray 1 is used exclusively for A4 (11 x 8.5) paper size. The paper feed tray 2 is used for A4, 11 x 8.5, or B5 paper size. To change the paper size, change the paper guide and change the set value of SIM 26-2.

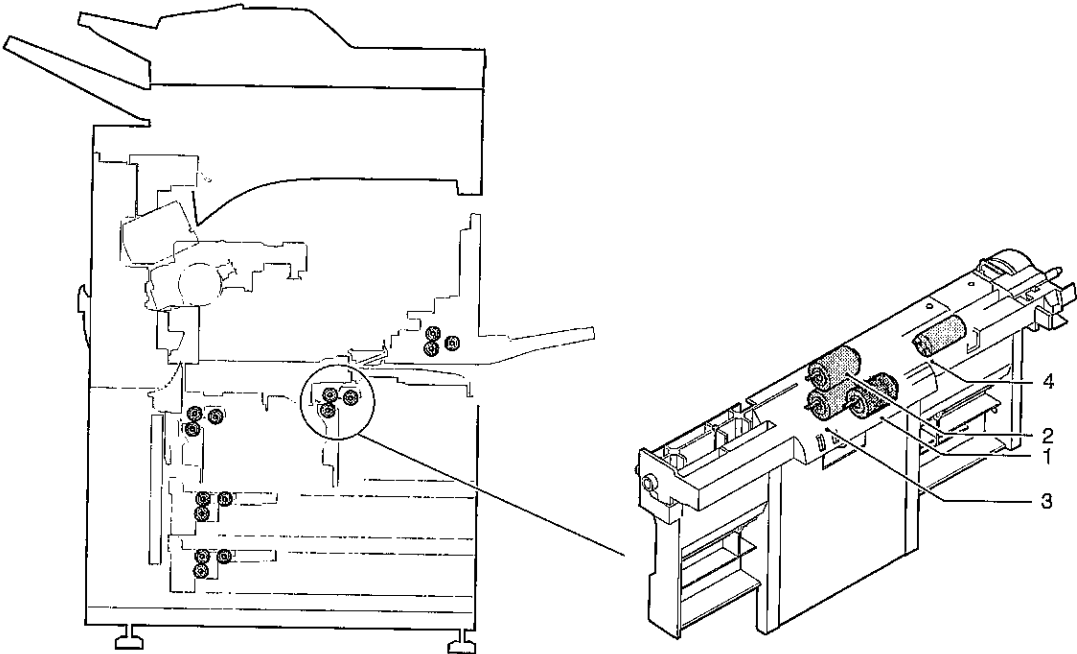
C. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| Unit name | No. | Part name | When calling | AR-M550U/N (PM: 250K) | | | | | | | | Remark |
|-------------------------------|-----|---------------------|--------------|-----------------------|------|------|-------|-------|-------|-------|-------|----------|
| | | | | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | |
| Paper feed tray units 1 and 2 | 1 | Paper pickup roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 2 | Paper feed roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 3 | Separation roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 4 | Torque limiter | × | × | × | × | × | × | × | × | × | (Note 1) |

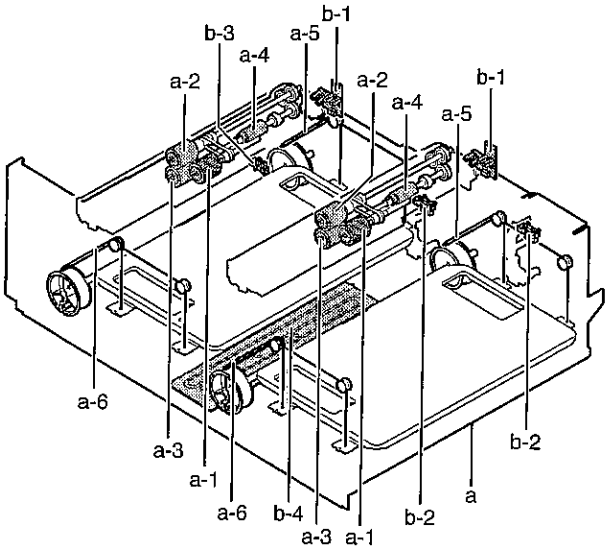
(Note 1) Replacement reference: For replacement, refer to each paper feed port counter value.
Paper feed tray units 1, 2 LCC section: 200K or 1 year
Torque limiter : 800K (However, 400K for manual paper feed section)



(2) Maintenance and parts replacement

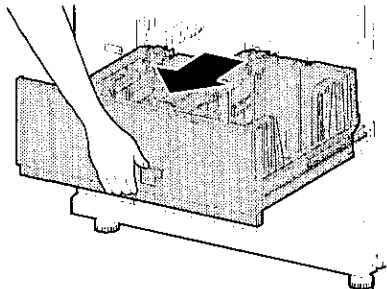
(List of Replacement Parts)

| No. | Unit | Parts | |
|-----|-------------------------------|---------------------------------------|---|
| a | Paper feed tray units 1 and 2 | 1 Pickup roller | × |
| | | 2 Paper feed roller | × |
| | | 3 Separation roller | × |
| | | 4 Torque limiter | × |
| | | 5 Lift wire (Rear) | |
| | | 6 Lift wire (Front) | |
| b | Others | 1 Paper remaining quantity sensor PWB | |
| | | 2 Paper remaining quantity detector | |
| | | 3 Paper feed trays 1 and 2 sensor | |
| | | 4 Dry heater | |

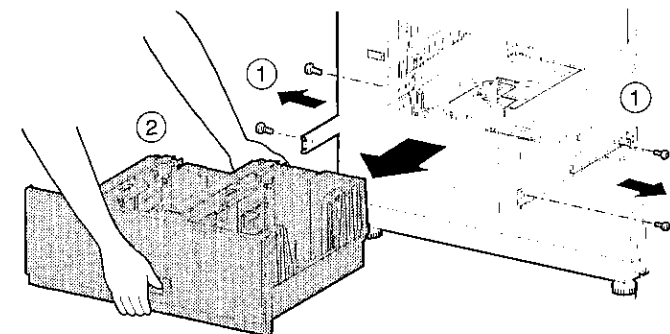


a. Paper feed tray units 1 and 2

- 1) Pull out the paper feed tray units 1 and 2.



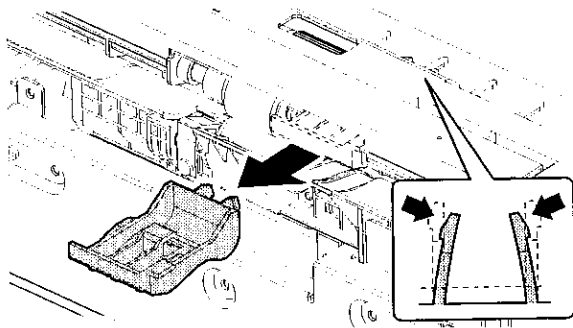
- 2) Remove the fixing screws from the right and left rails.



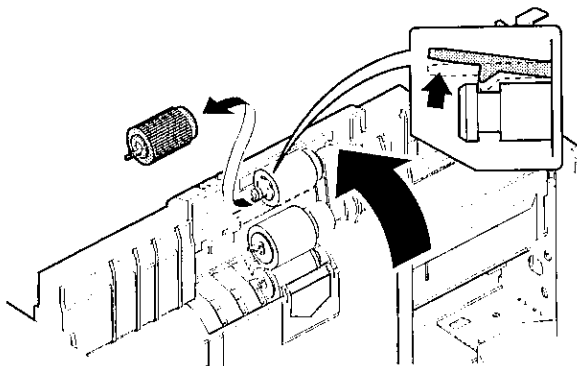
- 3) Remove while holding the points shown in the diagram with two hands.

a-1. Pickup roller

- 1) Pull out the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2")
- 2) Unhook the claws to remove the paper guide.

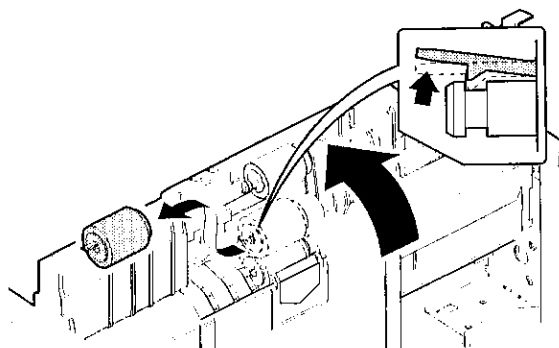


- 3) Unhook the claw to lift up the first paper feed tray feed section, and then remove the pickup roller.



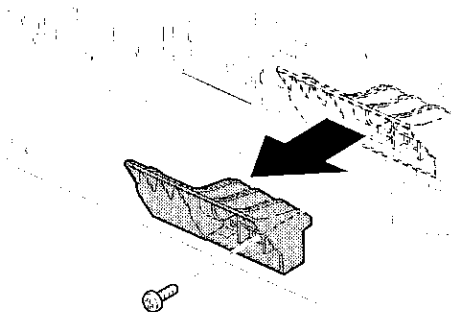
a-2. Paper feed roller

- 1) Pull out the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2")
- 2) Unhook the claws to remove the paper guide. (See "a-1. Pickup roller")
- 3) Unhook the claw to lift up the first paper feed tray feed section, and then remove the paper feed roller.

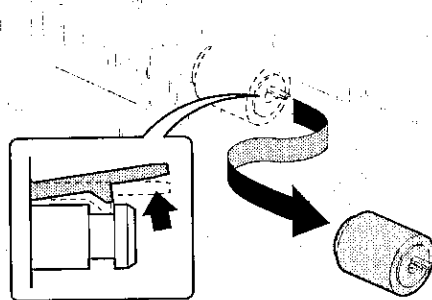


a-3. Separation roller

- 1) Pull out the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2")
- 2) Unhook the claws to remove the paper guide. (See "a-1. Pickup roller")
- 3) Remove the lower paper guide.

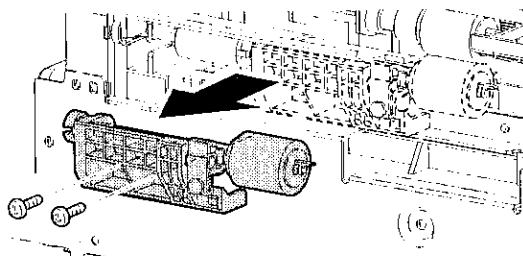


- 4) Unhook the claws to remove the reverse roller.

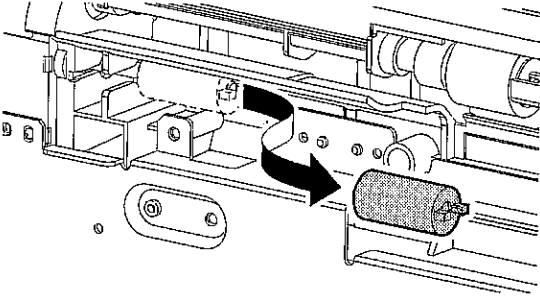


a-4. Torque limiter

- 1) Pull out the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2")
- 2) Unhook the claws to remove the paper guide. (See "a-3. Separation roller")
- 3) Remove the reverse roller unit.

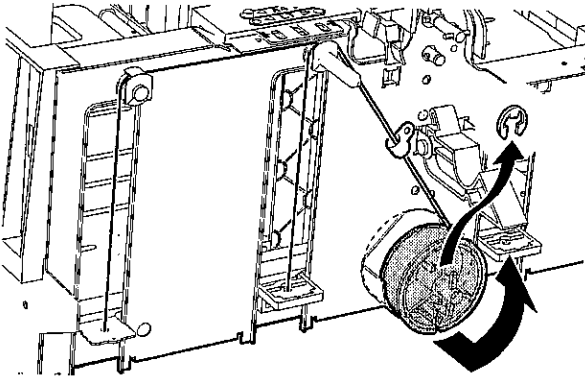


- 4) Remove the torque limiter.

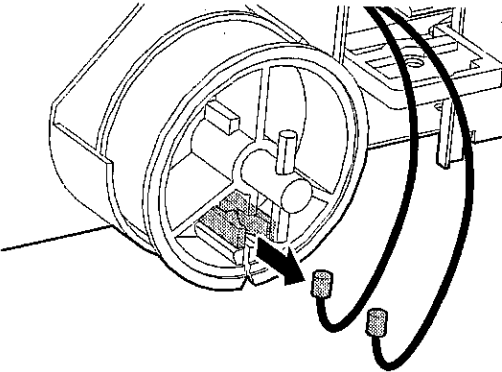


a-5. Lift wire (Rear)

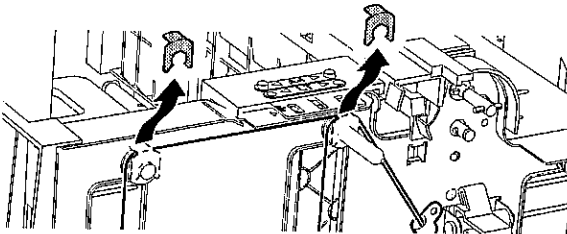
- 1) Remove the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2" in "(Paper feed tray sections 1 and 2)")
- 2) Remove the E-ring, slide the winding pulley, and loosen the wire.



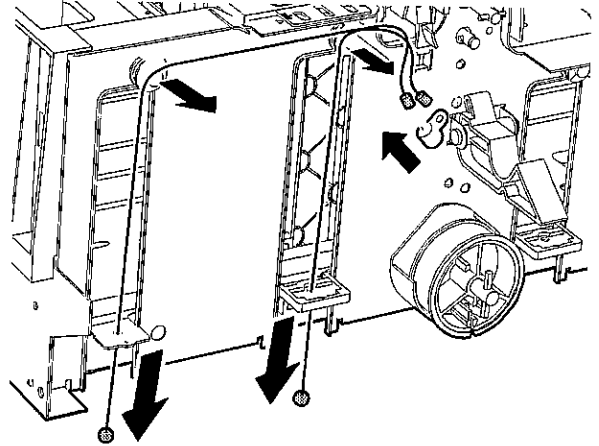
- 3) Release the pawl, and remove the wire.



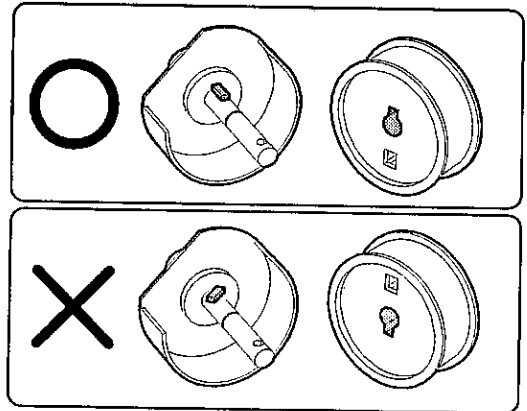
- 4) Remove the plastic E-ring.



- 5) Remove the wire.

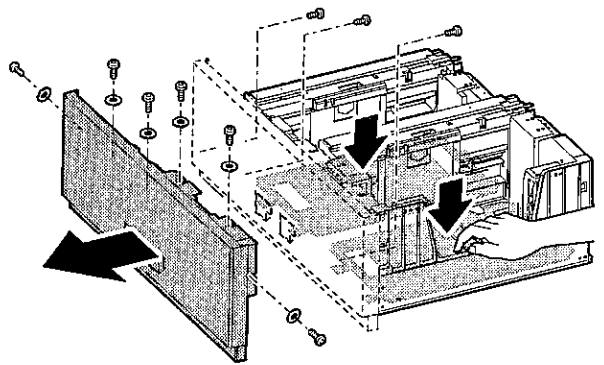


- * Pass the nylon clamp.
- * Attach so that the red wire is on the outside.
- * Turn it clockwise to fit with the T-shape pin position and insert.

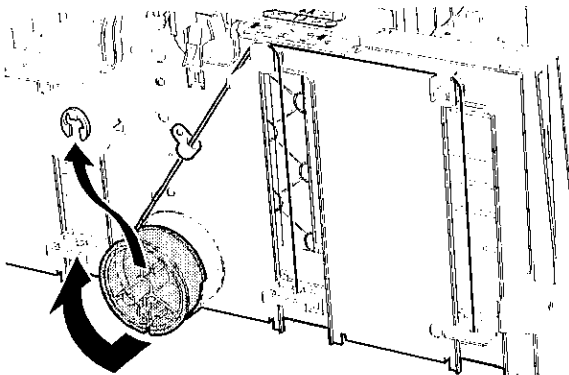


a-6. Lift wire (Front)

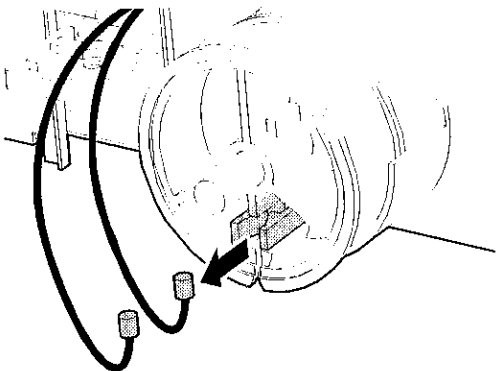
- 1) Remove the paper feed tray 1/2 unit. (See "(Paper feed tray sections 1 and 2)" in "a. Paper feed tray units 1 and 2")
- 2) Push down the tray and remove the screw, and remove the paper feed tray 1/2 front cabinet.



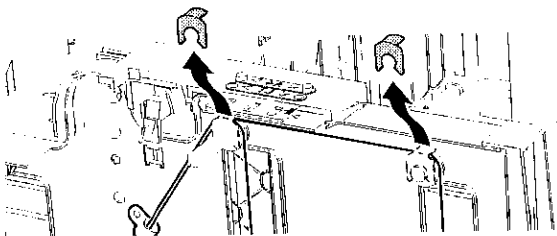
3) Remove the E-ring, slide the winding pulley, and loosen the wire.



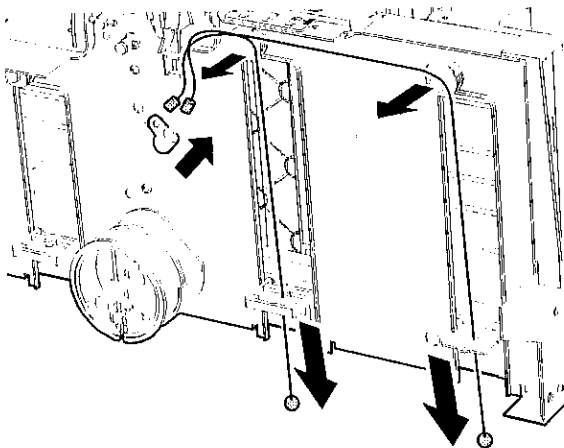
4) Release the pawl, and remove the wire.



5) Remove the plastic E-ring.

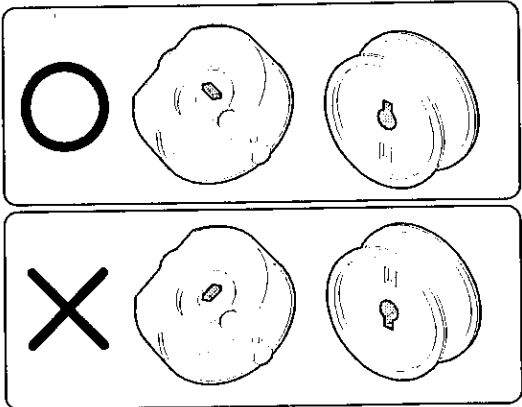


6) Remove the wire.



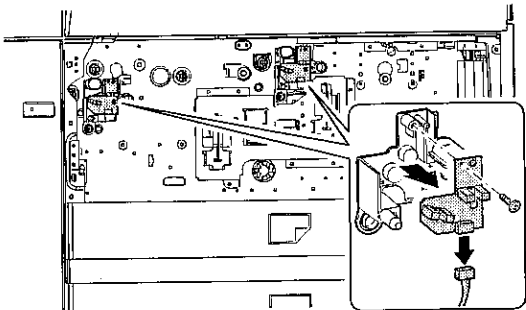
- * Pass the nylon clamp.
- * Attach so that the red wire is on the outside.

* Turn it counterclockwise and fit with the T-shape pin position and insert.



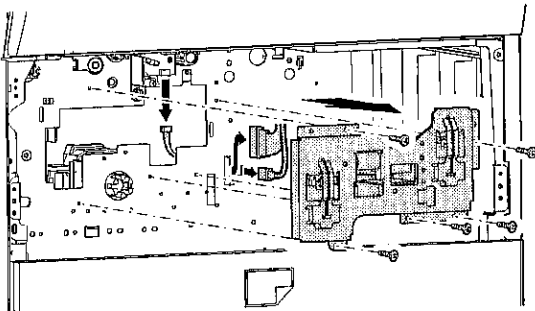
b-1. Paper remaining quantity sensor PWB

- 1) Remove the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2" in this section)
- 2) Disconnect the connector, and remove the paper remaining quantity sensor PWB.

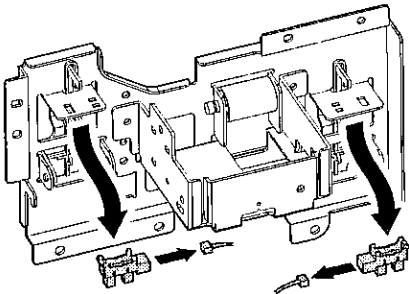


b-2. Paper remaining quantity detector

- 1) Remove the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2" in this section)
- 2) Disconnect the connector, and remove the paper feed tray lock arm unit.



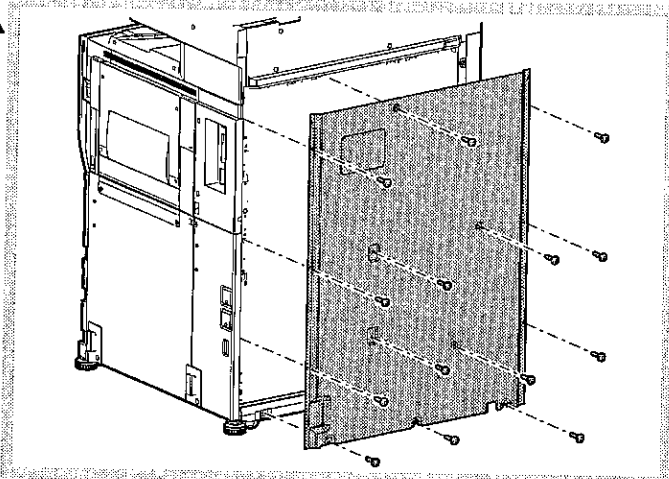
- 3) Disconnect the connector, and remove the paper remaining quantity detector.



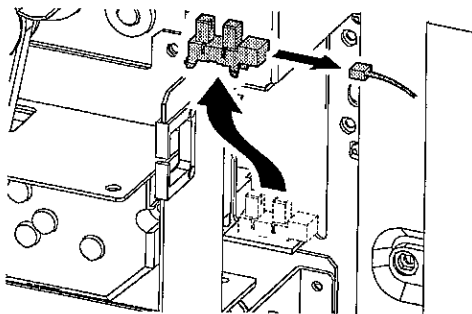
▲ : Feb. 6 2004

b-3. Paper feed trays 1 and 2 sensor

- 1) Remove the rear cabinet.

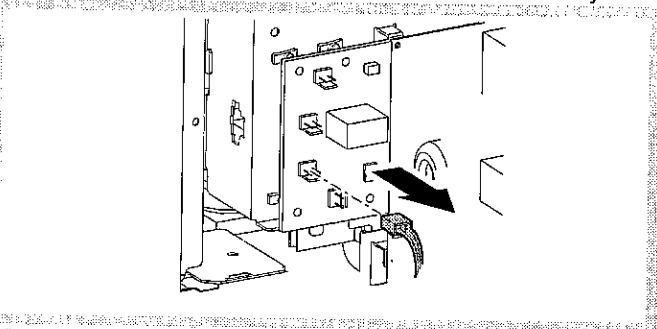


- 2) Disconnect the connector, and remove the paper feed trays 1 and 2 sensor.

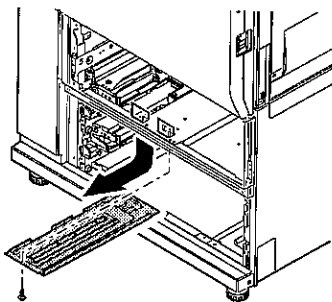


b-4. Dry heater

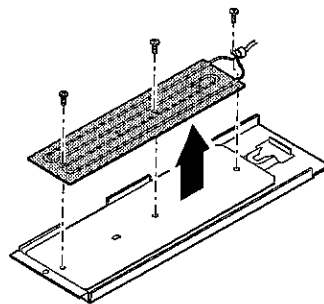
- 1) Remove the rear cabinet. (See "b-3. Paper feed trays 1 and 2 sensor" in this section)
- 2) Disconnect the connector from the dehumidifier heater relay PWB.



- 3) Remove the paper feed tray unit, and remove the dry heater band.
- 4) Remove the dry heater unit.

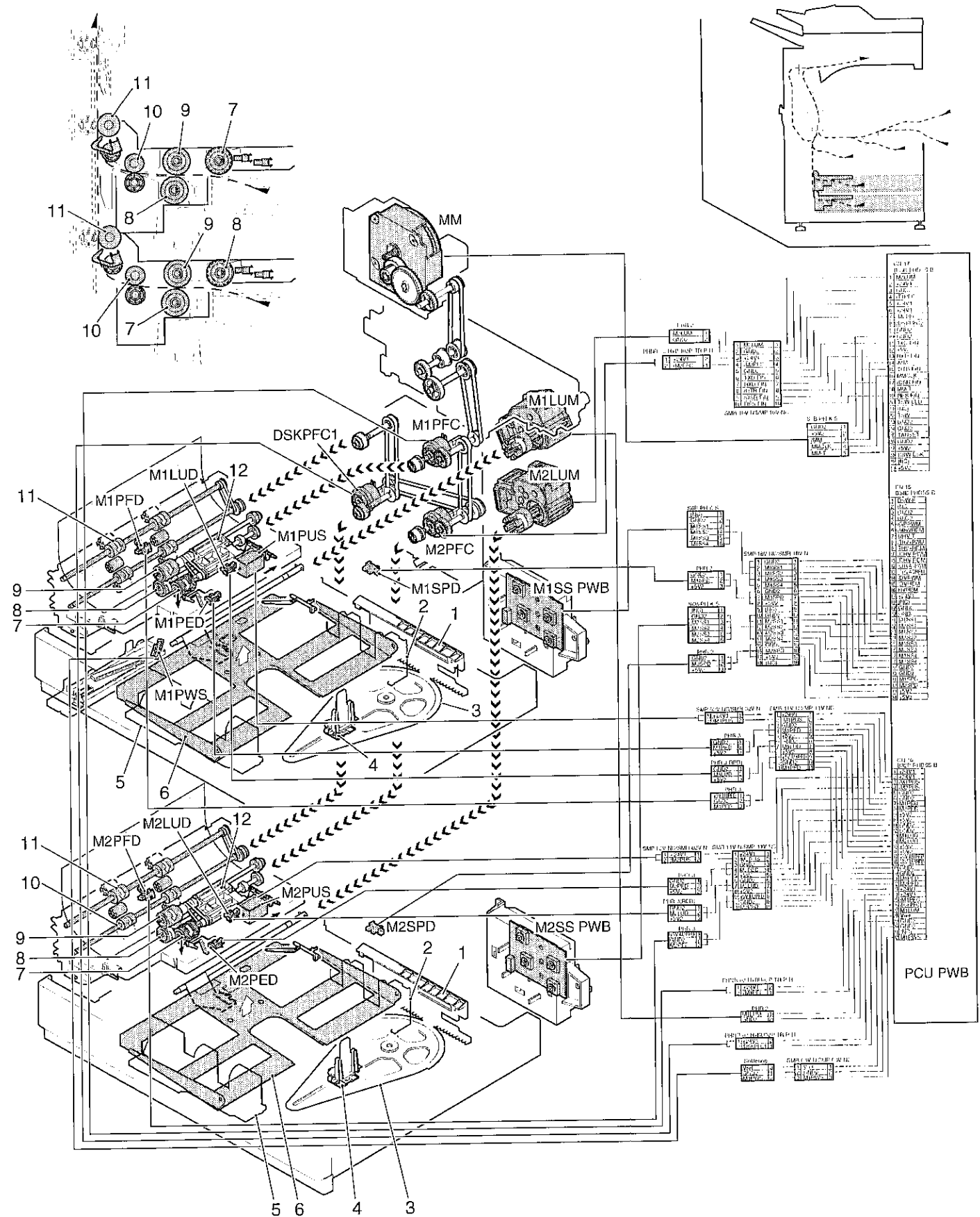


- 4) Remove the dry heater.



(Paper feed trays 3 and 4)

A. Major parts and signal functions



| Code | Signal name | Name | Function/Operation | Type | Model | Note |
|----------|-------------|--|--|--------------------------|-------|---|
| M1LUD | M1LUD | Paper tray upper limit detector (Paper feed tray 3) | Paper tray upper limit detection (Paper feed tray 3) | Transmission type | | Paper feed tray system sensor |
| M1PED | M1PED | Paper empty detector (Paper feed tray 3) | Paper empty detection (Paper feed tray 3) | Transmission type | | Paper feed tray system sensor |
| M1PFD | M1PFD | Paper pass detector (Multi paper feed tray 3) | Paper feed tray 3 paper pass detection | Transmission type | | Paper transport system sensor |
| M1PWS | M1PWS | Paper feed tray paper width detector (Paper feed tray 3) | Multi paper feed tray paper width detection (Paper feed tray 3) | Slide resistor | | Analog detector |
| M1SPD | M1SPD | Paper remaining quantity detector (Paper feed tray 3) | Paper remaining quantity detection (Multi paper feed tray 3) | Transmission type | | Paper feed tray remaining quantity sensor |
| M2LUD | M2LUD | Paper tray upper limit detector (Paper feed tray 4) | Paper tray upper limit detection (Paper feed tray 4) | Transmission type | | Paper feed tray system sensor |
| M2PED | M2PED | Paper empty detector (Paper feed tray 4) | Paper empty detection (Paper feed tray 4) | Transmission type | | Paper feed tray system sensor |
| M2PFD | M2PFD | Paper pass detector (Multi paper feed tray 4) | Paper feed tray 4 paper pass detection | Transmission type | | Paper transport system sensor |
| M2SPD | M2SPD | Paper remaining quantity detector (Paper feed tray 4) | Paper remaining quantity detection (Paper feed tray 4) | Transmission type | | Paper feed tray remaining quantity sensor |
| M1PFC | M1PFC | Paper feed clutch (Paper feed tray 3) | Paper feed tray 3 section roller ON/OFF control | Electromagnetic clutch | | |
| M2PFC | M2PFC | Paper feed clutch (Paper feed tray 4) | Paper feed tray 4 section roller ON/OFF control | Electromagnetic clutch | | |
| DSKPFC1 | DSKPFC1 | Paper feed tray 3/4 paper transport clutch 1 | Paper feed tray 3/4 section paper transport roller ON/OFF control | Electromagnetic clutch | | |
| M1PUS | M1PUS | Paper pickup solenoid (Paper feed tray 3) | Presses the paper pickup roller onto paper. | Electromagnetic solenoid | | |
| M2PUS | M2PUS | Paper pickup solenoid (Paper feed tray 4) | Presses the paper pickup roller onto paper. | Electromagnetic solenoid | | |
| MM | MM | Main motor | Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section. | DC brushless motor | | Paper pass |
| M2SS PWB | | Paper size detection PWB | Paper size detection | | | |

| No. | Name | Function |
|-----|---|--|
| 1 | Paper size detection plate | Changes its own position in conjunction with the paper size (length) adjustment lever. By this operation, the paper size detector detects the paper size. |
| 2 | Paper width guide R | Suppresses skew to the minimum by restricting the paper width. |
| 3 | Paper size detection rotation plate | Changes its own position in conjunction with the paper size (length) adjustment lever. By this operation, the paper size detection plate position is changed and the paper size detector detects the paper size. |
| 4 | Paper size (length) guide plate | Regulates the paper size (length). |
| 5 | Paper width guide L | By restricting the paper width, skew is restricted to the minimum. |
| 6 | Lift plate | Lifts the paper to maintain the paper feed position at the fixed position. |
| 7 | Paper pickup roller | Sends paper to the paper feed roller. |
| 8 | Separation roller | Separates paper to prevent against double feed |
| 9 | Paper feed roller | Feeds paper to the paper transport section. |
| 10 | Transport roller 8 (Paper feed tray 3) Transport roller 5 (Paper feed tray 4) | Transports paper from the paper feed tray 3 to the transport rollers 9 and 10. Transports paper from the paper feed tray 4 to the transport rollers 6 and 7. |
| 11 | Transport roller 10 (Paper feed tray 3) Transport roller 7 (Paper feed tray 4) | Transports paper from the transport rollers 7 and 8 to the transport roller 11. Transports paper from the transport roller 5 to the transport roller 10. |
| 12 | Torque limiter | Provides a certain level of resistance power for the paper separation roller rotation to prevent against double feed. |

B. Operational descriptions

(1) Each paper feed tray paper size detection method

a. Multi-purpose paper feed tray (Tray 3), paper feed tray (Paper feed tray 4)

1) Paper width detection

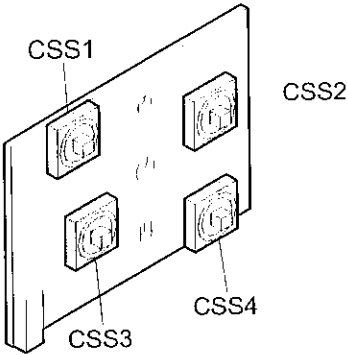
The paper width is calculated with the VR voltage value (A/D conversion value) linked with the side guide plate.

Paper width and paper size (set in the range of standard value ± 6 [mm]).

| Width size detection pattern | Paper size | Standard value [mm] | Range [mm] |
|------------------------------|-----------------|---------------------|---------------|
| A | A3/A4 | 297.0 | 303.0 - 291.0 |
| B | WLT/LT | 279.4 | 285.4 - 273.4 |
| C | B4/B5 | 257.0 | 263.0 - 251.0 |
| D | LG/LTR/Foolscap | 215.9 | 221.9 - 209.9 |
| E | A4R | 210.0 | 216.0 - 204.0 |
| F | Exective-R | 184.1 | 190.1 - 178.1 |
| G | B5R | 182.0 | 188.0 - 176.0 |

2) Paper size detection

The paper size detection is made by the combination of the cassette paper size detector 1 to 4.



Relationship Between Paper Size and Detection by the Paper Size Detector

| Vertical size detection pattern | Detection SW status | | | | AB size | Inch size | Width of detection range |
|---------------------------------|---------------------|------|------|------|------------------------------|-----------|--------------------------|
| | CSS1 | CSS2 | CSS3 | CSS4 | | | |
| 1 | ON | ON | OFF | ON | B5 | Extra | 147.0 - 198.0 |
| 2 | OFF | ON | OFF | ON | A4 | LT | 198.0 - 237.0 |
| 3 | OFF | ON | ON | ON | B5R | EX-R | 237.0 - 274.0 |
| 4 | OFF | OFF | ON | ON | A4R | LTR | 274.0 - 314.0 |
| 5 | ON | OFF | ON | ON | Foolscap | Extra | 314.0 - 347.0 |
| 6 | ON | OFF | ON | OFF | B4 | LGL | 347.0 - 389.0 |
| 7 | ON | ON | ON | OFF | A3 | WLT | 389.0 - 432.8 |
| 0 | OFF | OFF | OFF | OFF | Paper feed tray not attached | | |

3) Combination of size detection

| Paper size | Width detection pattern | Vertical detection pattern |
|------------|-------------------------|----------------------------|
| B5 | C | 1 |
| A4 | A | 2 |
| B5R | G | 3 |
| A4R | E | 4 |
| Foolscap | D | 5 |
| B4 | B | 6 |
| A3 | A | 7 |
| LT | B | 2 |
| EX-R | F | 3 |
| LTR | D | 4 |
| LGL | D | 6 |
| WLT | B | 7 |

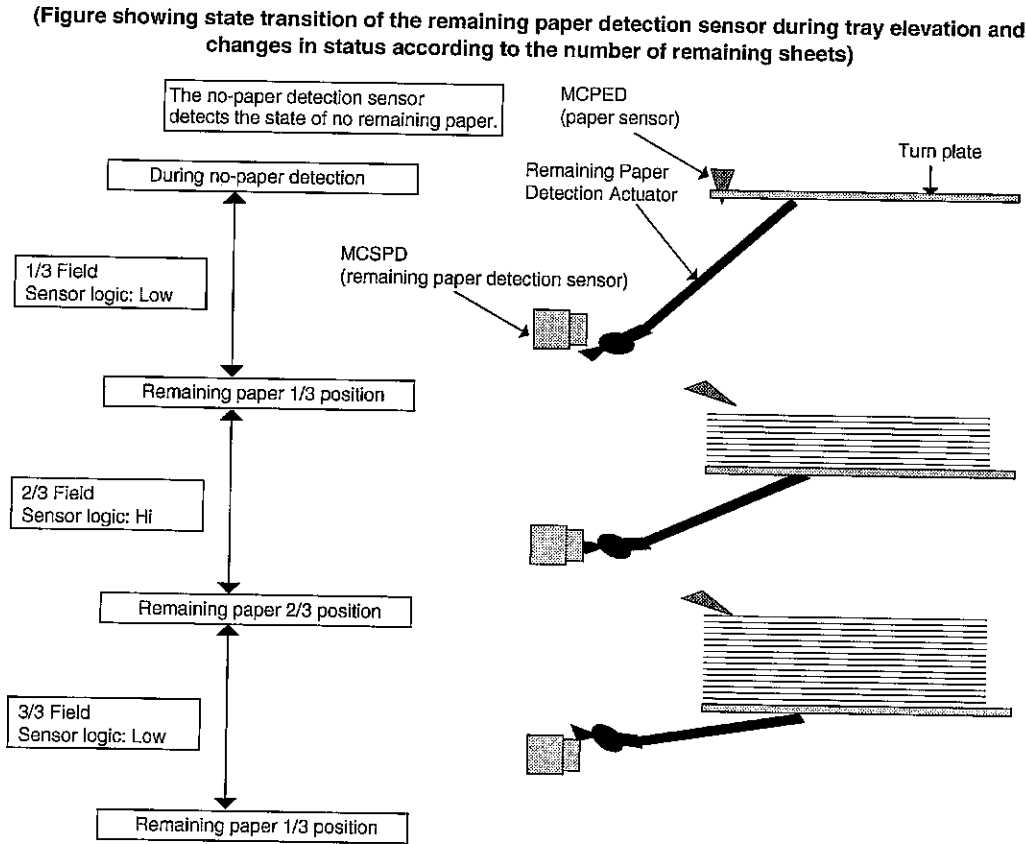
(2) Remaining paper detection

a. Remaining paper detection

Remaining paper detection is performed according to four stages, i.e. three stages with paper and one stage with no paper, and the result is displayed.

b. Detection method

The number of remaining sheets is determined according to the number of times the remaining paper sensor changes from the time the paper feed tray starts lifting up to the time when the upper detection sensor comes ON.



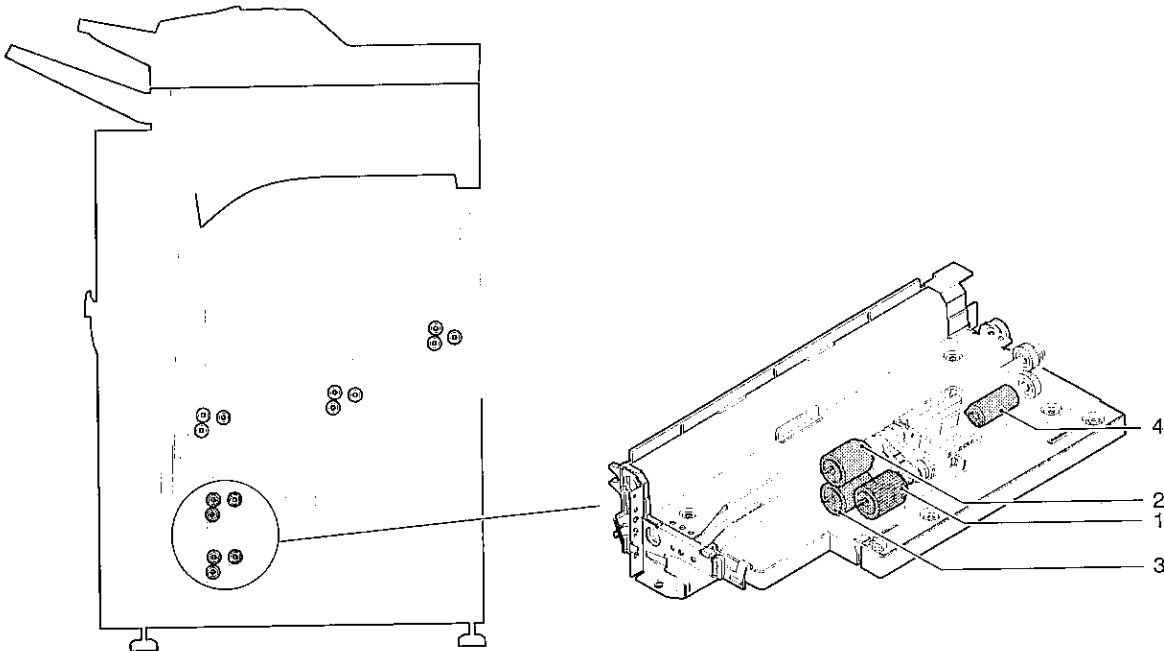
C. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| Unit name | No. | Part name | When calling | AR-M550U/N (PM: 250K) AR-M620U/N, AR-M700U/N (PM: 300K) | | | | | | | | Remark |
|--------------------------|-----|-------------------|--------------|--|------|------|-------|-------|-------|-------|-------|----------|
| | | | | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | |
| Paper Feed Trays 3 and 4 | 1 | Pickup roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 2 | Paper feed roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 3 | Separation roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 4 | Torque limiter | × | × | × | × | × | × | × | × | × | (Note 1) |

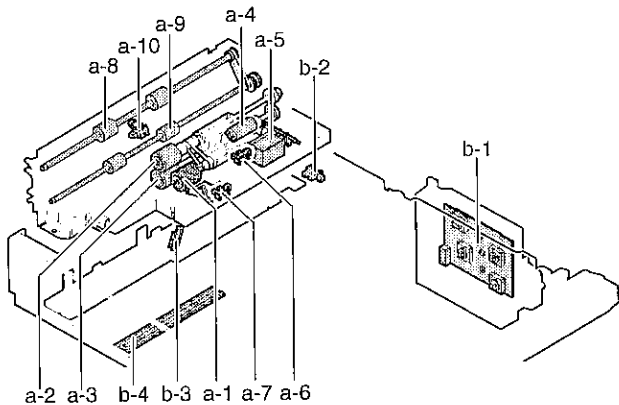
(Note 1) Replacement reference: For replacement, refer to each paper feed port counter value.
Torque limiter: 800K (However, 400K for manual paper feed section)
Paper feed tray 3/4, paper feed unit section: 100K or 1 year



(2) Maintenance and parts replacement

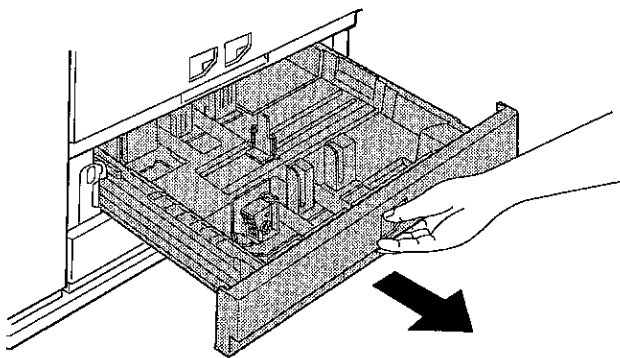
(List of Replacement Parts)

| No. | Unit | Parts | | |
|-----|-------------------------------|-------|--------------------------------------|---|
| a | Paper feed tray units 3 and 4 | 1 | Pickup roller | × |
| | | 2 | Paper feed roller | × |
| | | 3 | Separation roller | × |
| | | 4 | Torque limiter | × |
| | | 5 | Paper pickup solenoid | |
| | | 6 | Paper feed tray upper limit detector | |
| | | 7 | Paper feed tray empty detector | |
| | | 8 | Transport roller 8, 10 | |
| | | 9 | Transport roller 5, 7 | |
| | | 10 | Paper pass detector | |
| b | Others | 1 | Paper size detection PWB | |
| | | 2 | Paper remaining quantity detector | |
| | | 3 | Paper feed tray paper width detector | |
| | | 4 | Dry heater | |

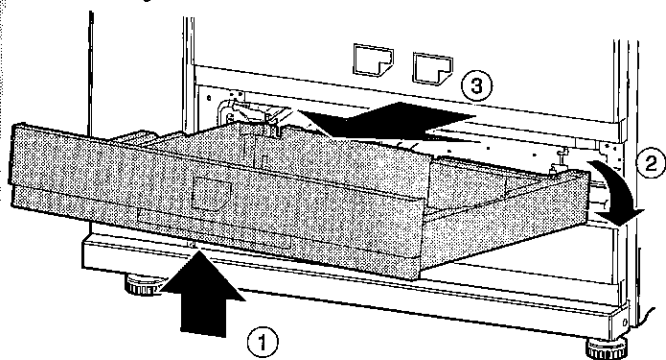


▲ a. Paper feed tray units 3 and 4

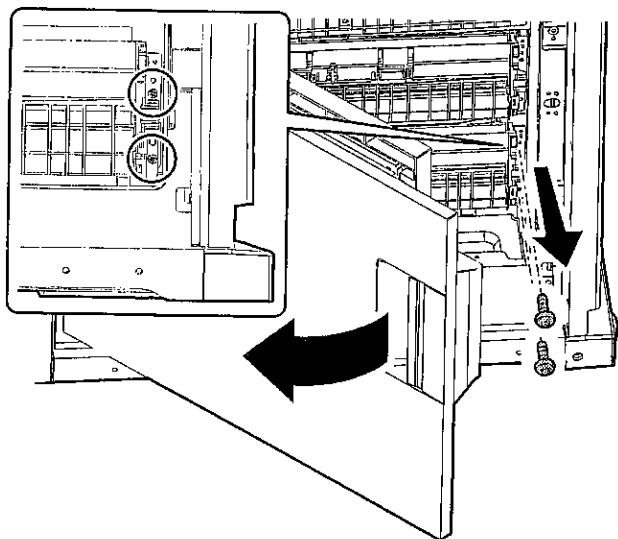
- 1) Gently pull out the paper feed tray until it stops.



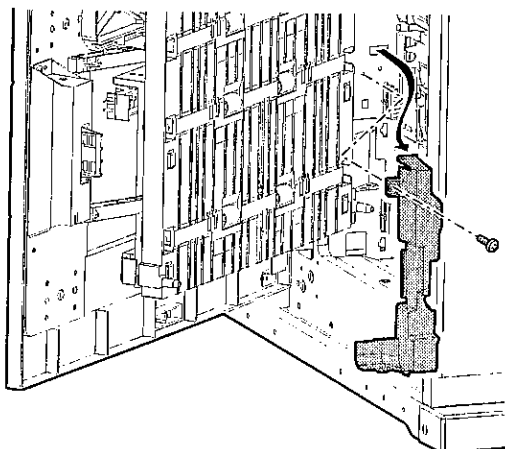
- 2) Lifting up the paper feed tray unit slightly, remove it at an angle from the right side.



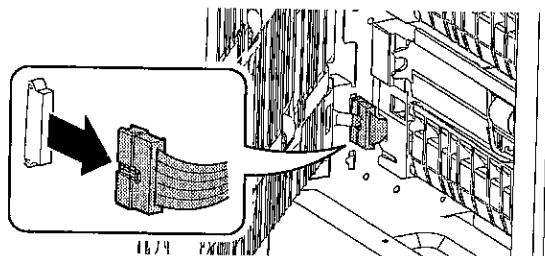
- 3) Open the bottom left cabinet.



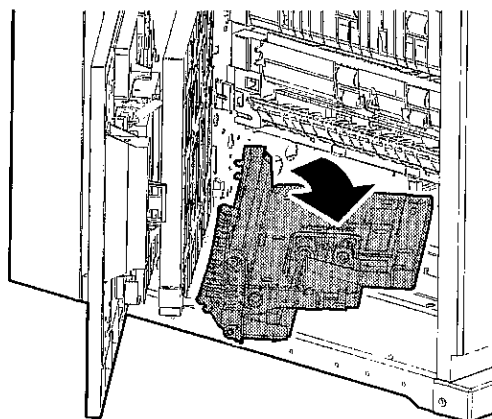
- 4) Remove the connector cover.



- 5) Disconnect the connectors.

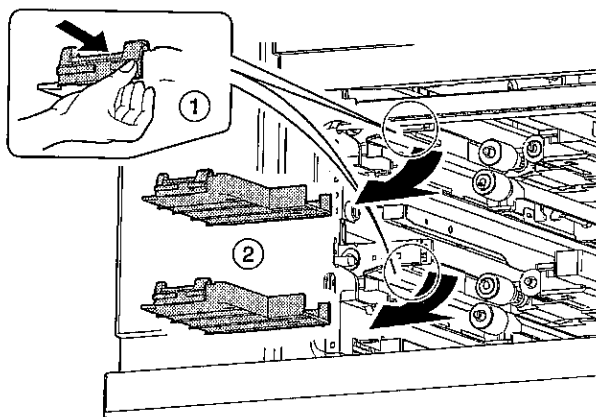


- 6) Remove the paper feed tray paper feed units 3 and 4 from the lower shelf.

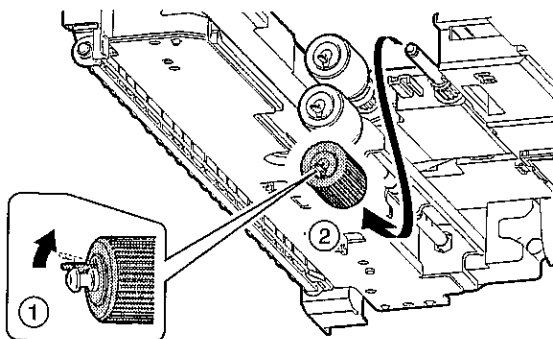


a-1. Pickup roller

- 1) Remove the paper feed tray units 3 and 4. (See "a. Paper feed tray units 3 and 4")
- 2) Remove the paper guide.

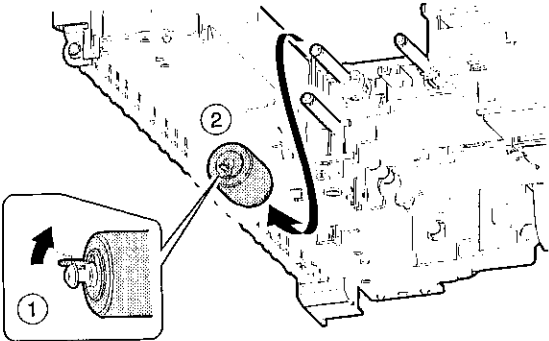


- 3) Unhook the claws to remove the pickup roller.



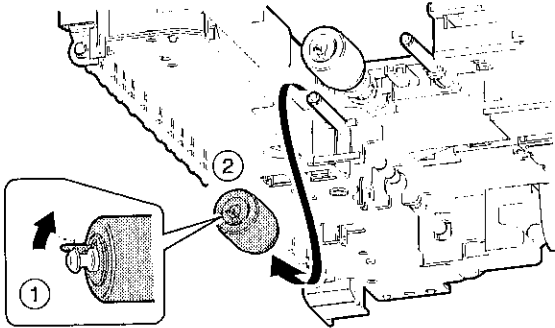
a-2. Paper feed roller

- 1) Remove the paper feed tray units 3 and 4. (See ""')
- 2) Remove the paper guide. (See "a-1. Pickup roller")
- 3) Release the pawl, and remove the paper feed roller.



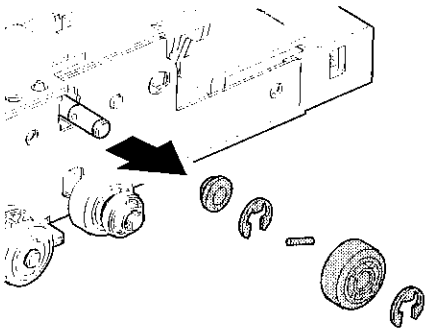
a-3. Separation roller

- 1) Remove the paper feed tray units 3 and 4. (See ""')
- 2) Remove the paper guide. (See "a-1. Pickup roller")
- 3) Release the pawl, and remove the separation roller.

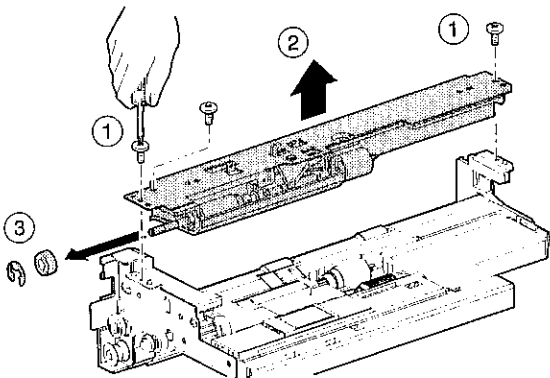


a-4. Torque limiter

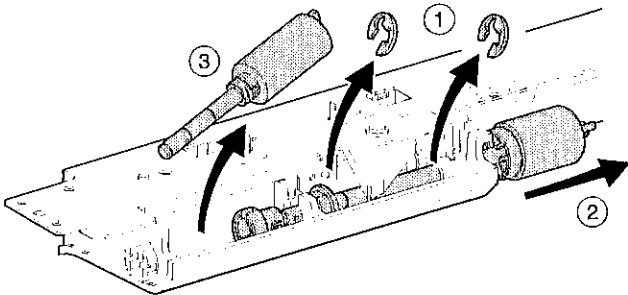
- 1) Remove the paper feed tray units 3 and 4. (See ""')
- 2) Remove the E-ring, the gear and the pin.



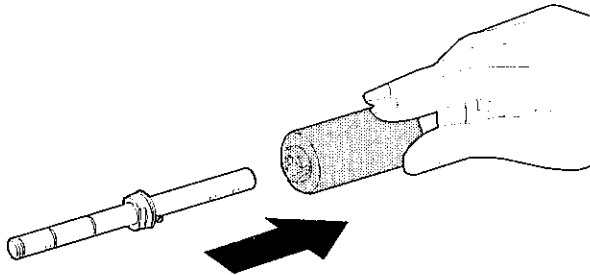
- 3) Remove the E-ring and the bearing.
- 4) Remove the separation roller unit.



- 5) Remove the E-ring, and one-way clutch.
- 6) Remove the E-ring and shift the separation roller shaft.

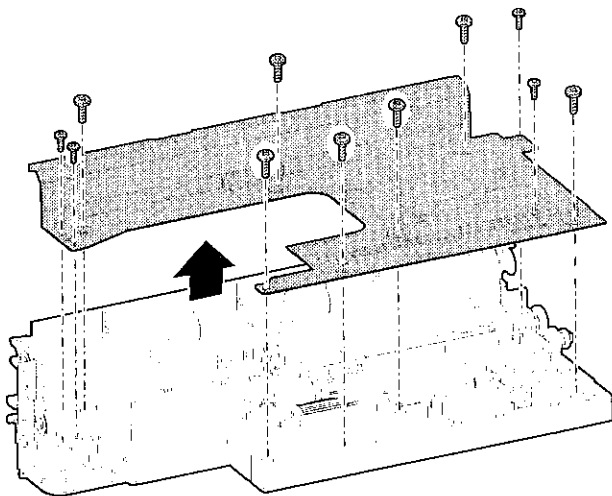


- 7) Remove the shaft unit.
- 8) Remove the torque limiter.

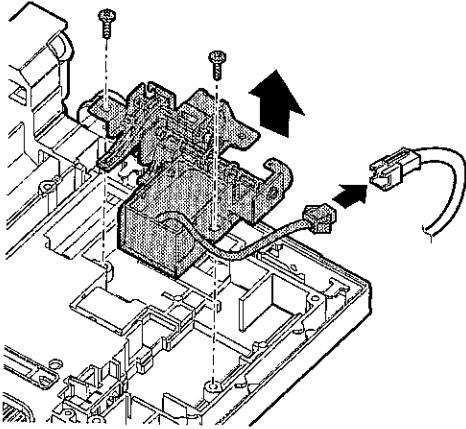


a-5. Paper pickup solenoid

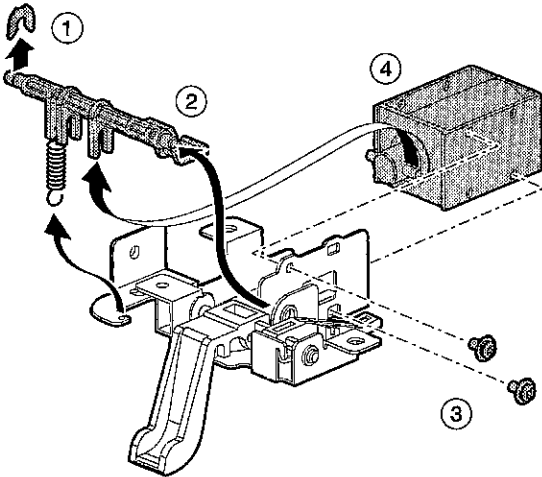
- 1) Remove the paper feed tray 3/4. (See ""')
- 2) Remove the cover.



- 3) Remove the solenoid unit.



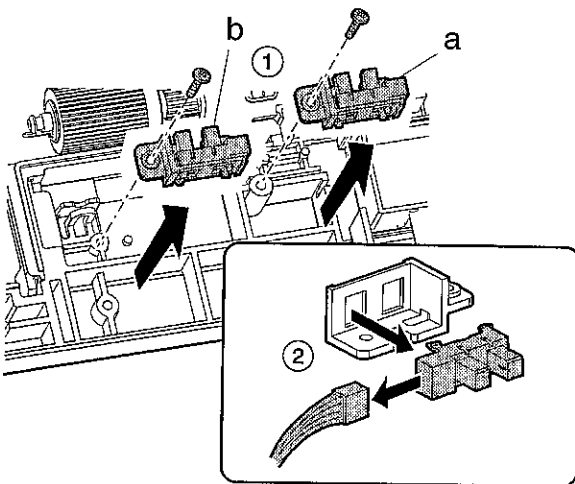
- 4) Remove the paper pickup solenoid.



a-6. Paper feed tray upper limit detector

a-7. Paper feed tray empty detector

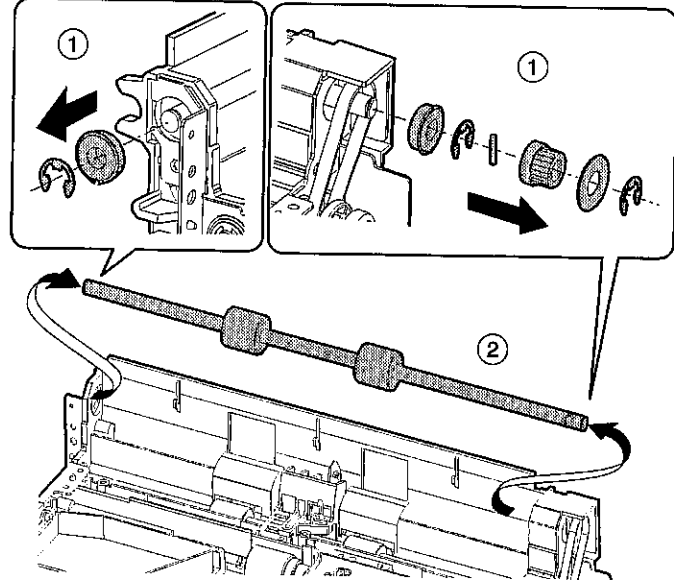
- 1) Remove the paper feed tray 3/4. (See "a-1")
- 2) Remove the cover. (See "a-5. Paper pickup solenoid")
- 3) Remove the paper feed tray upper detector unit (a) and the paper feed tray empty detector unit (b).



- 4) Remove the detector.

a-8. Transport roller 8, 10

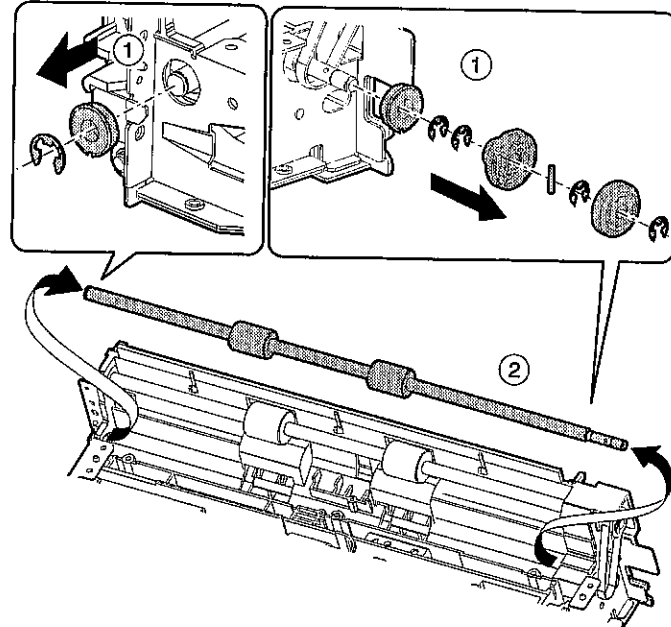
- 1) Remove the paper feed tray 3/4. (See "a-1")
- 2) Remove the cover. (See "a-5. Paper pickup solenoid")
- 3) Remove the E-ring and remove the pulley bearing.



- 4) Remove the transport roller 8, 11.

a-9. Transport roller 5, 7

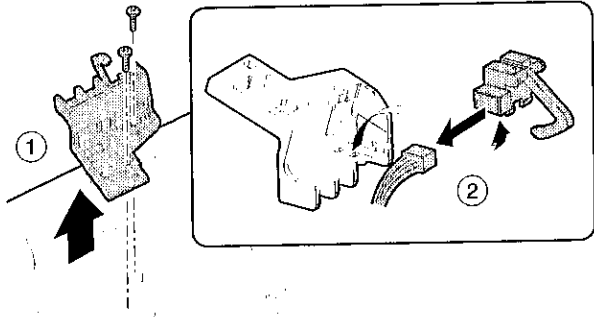
- 1) Remove the paper feed tray 3/4. (See "a-1")
- 2) Remove the cover. (See "a-5. Paper pickup solenoid")
- 3) Remove the E-ring and remove the pulley bearing.



- 4) Remove the transport roller 5, 7.

a-10. Paper pass detector

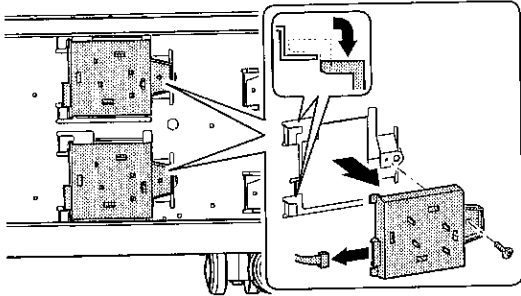
- 1) Remove the paper feed tray 3/4.
- 2) Remove the cover. (See "a-5. Paper pickup solenoid")
- 3) Remove the paper pass detector unit.



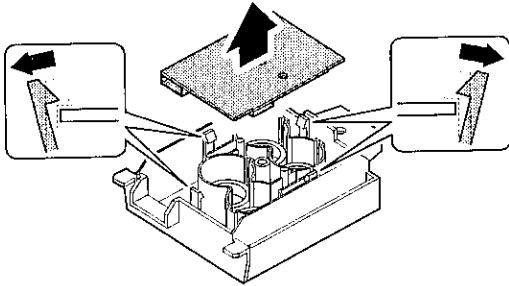
- 4) Remove the paper pass detector.

b-1. Paper size detection PWB

- 1) Remove the paper feed unit. (See "a-1. Pickup roller" in this section)
- 2) Disconnect the connector, and remove the paper size detection PWB unit.

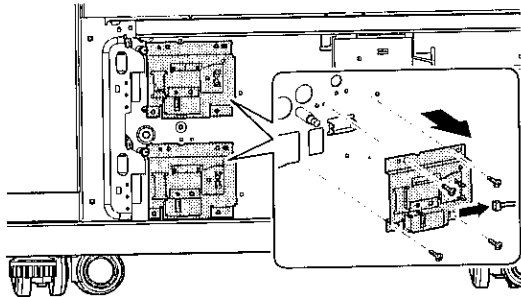


- 3) Release the pawl, and remove the paper size detection PWB.

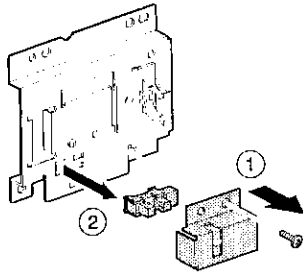


b-1. Paper remaining quantity detector

- 1) Remove the paper feed unit. (See "a-1. Pickup roller" in this section)
- 2) Disconnect the connector, and remove the paper remaining quantity detector unit.



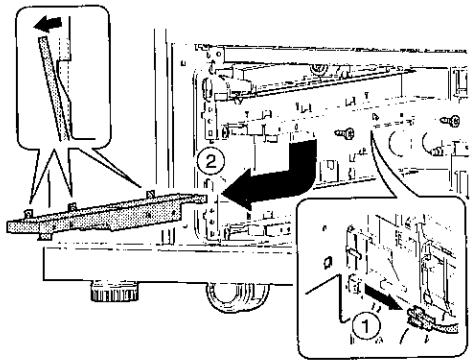
- 3) Remove the paper remaining quantity detector cover. Remove the paper remaining quantity detector.



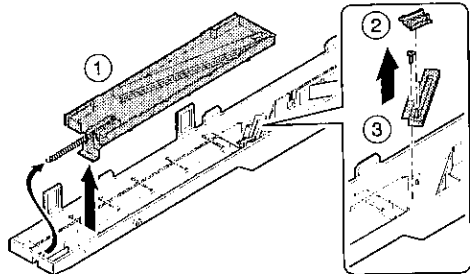
b-3. Paper feed tray paper width detector

- 1) Remove the paper feed tray 3/4 unit lower. (See "a. Paper feed tray units 3 and 4" in this section)
- 2) Remove the paper feed unit. (See "a-1. Pickup roller" in this section)

- ▲ 3) Disconnect the connector, and release the pawl, and remove the width detection unit.



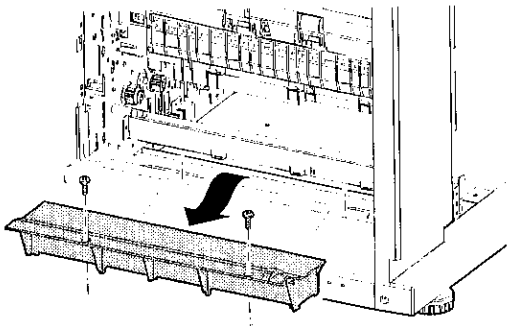
- 4) Remove the spring, and remove the paper width mounting base. Remove the width detection arm and remove the paper feed tray paper width detector.



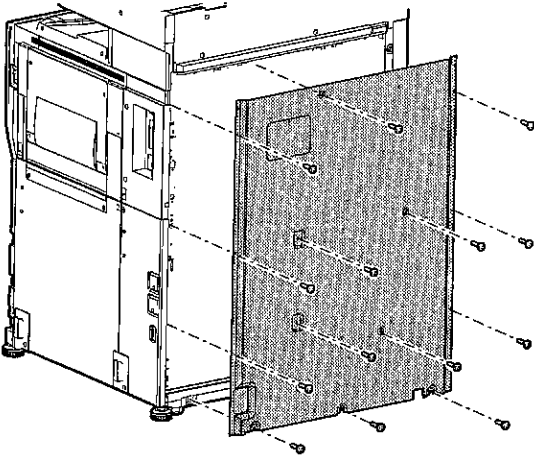
b-4. Dry heater

- 1) Remove the paper feed tray 3/4 unit lower. (See "a. Paper feed tray units 3 and 4" in this section)
- 2) Remove the paper feed unit. (See "a-1. Pickup roller" in this section)

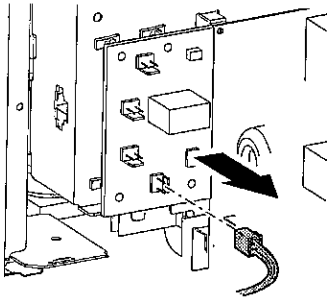
- ▲ 3) Remove the paper feed lower cover.



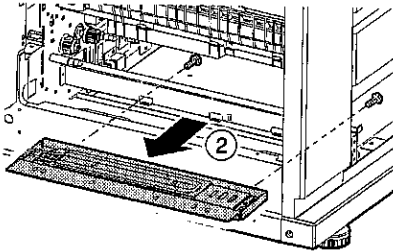
▲ 4) Remove the rear cabinet.



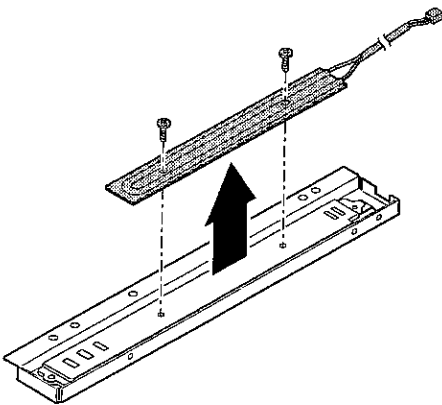
5) Disconnect the connector from the dehumidifying heater relay PWB, and remove the band.



6) Remove the dry heater unit.



7) Remove the dry heater.



[Paper Transport Section]

Outline

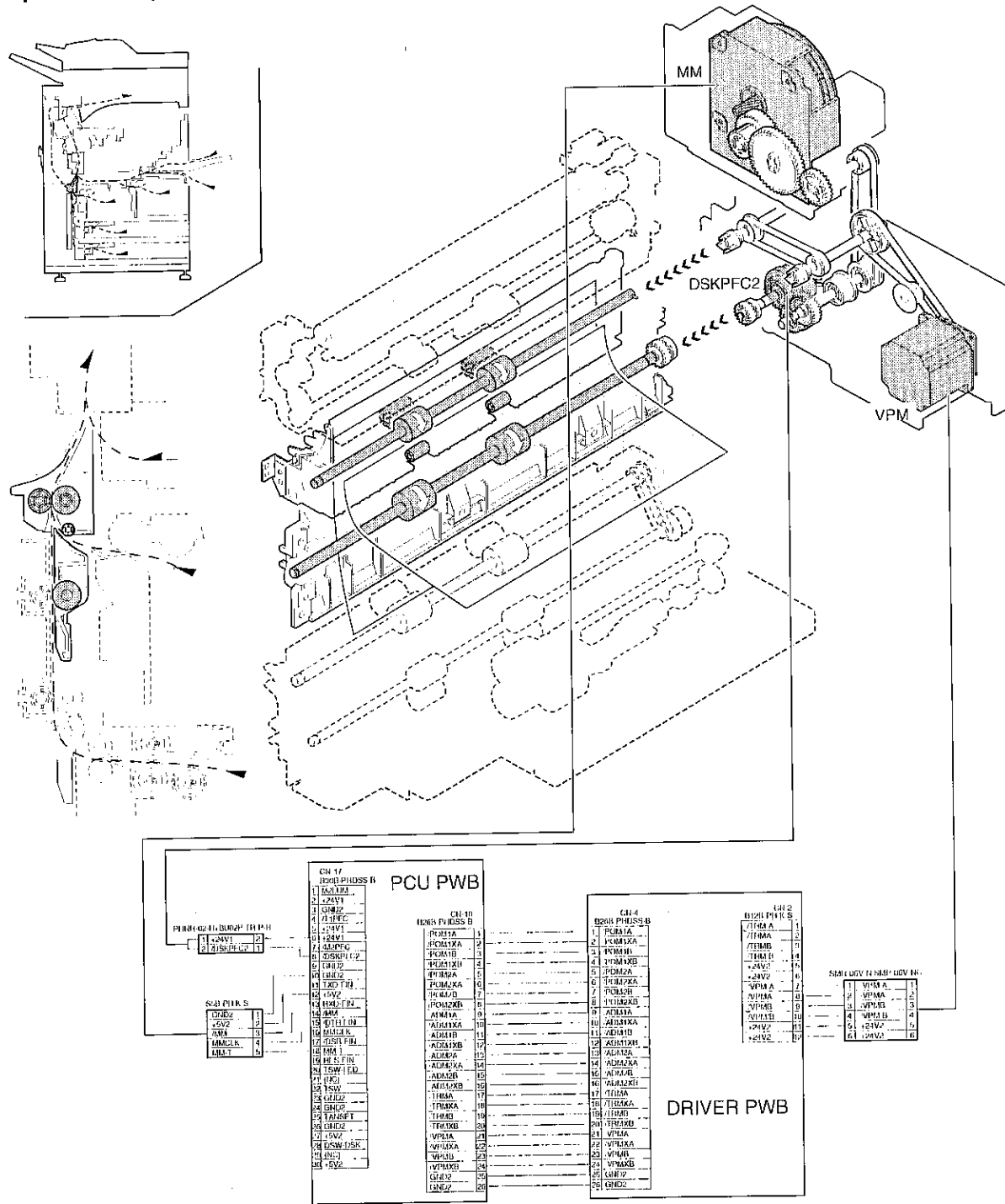
The paper transport section serves the function of transferring paper from each paper feed port to the registration roller section.

Paper from manual feed, paper feed tray units 1 and 2 (optional), and the right paper feed tray of the paper feed tray units 1 and 2 is transported horizontally, whereas paper from the left paper feed tray of the paper feed tray units 1 and 2, paper feed tray 3 and paper feed tray 4 is transported vertically to the registration roller section.

After the leading edge of the paper is synchronized with the leading edge of the drum image in the registration roller section, the paper that is transfer printed with the image in the transfer section passes through the fusing section and is discharged either face-down or face-up.

(Vertical paper transport section 1)

A. Major parts and signal functions



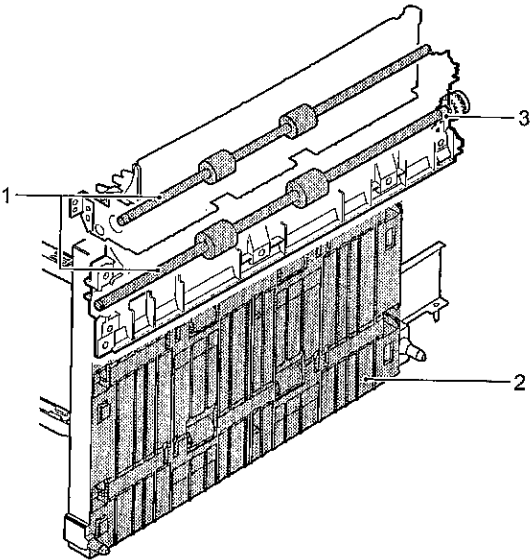
| | Code | Signal name | Name | Function/Operation | Type | Model | Note |
|---|---------|-------------|--|--|------------------------|-------|-------------------|
| ▲ | DSKPFC2 | DSKPFC2 | Paper feed tray 3/4 paper transport clutch 2 | Paper transport roller 11 ON/OFF control | Electromagnetic clutch | | |
| ▲ | VPM | VPM | Vertical paper transport motor | Drives the paper transport rollers 4 and 13. | Stepping motor | | Normal speed mode |
| | MM | MM | Main motor | Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section. | DC brushless motor | | Paper pass |

B. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

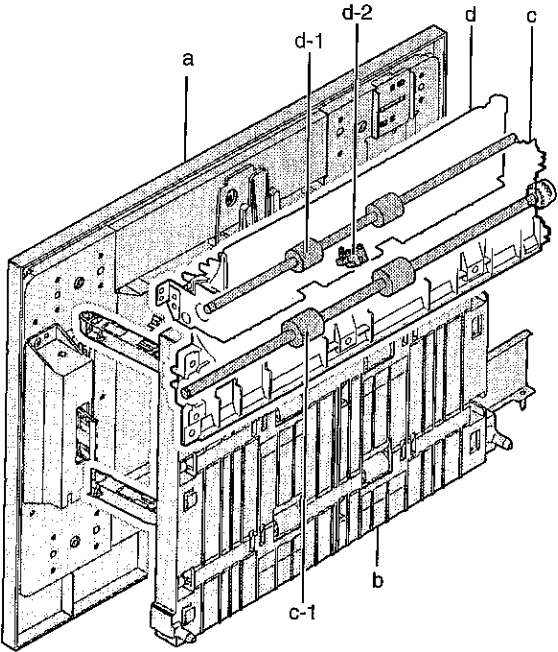
| | | AR-M550U/N (PM: 250K) | | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|--------------------------|-----|-----------------------------------|--|--------------|------|------|------|-------|-------|-------|-------|-------|---------------|
| | | AR-M620U/N, AR-M700U/N (PM: 300K) | | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Unit name | No. | Part name | | | | | | | | | | | |
| Vertical paper transport | 1 | Transport rollers | | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 2 | Transport paper guides | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 3 | Shaft (Grease) | | × | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | UKOG-0012QSZZ |



(2) Maintenance and parts replacement

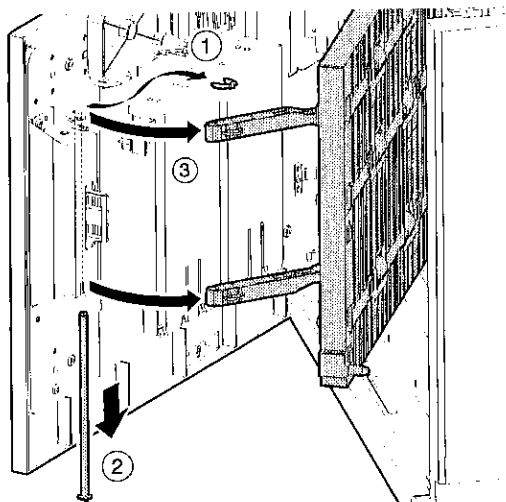
(List of Replacement Parts)

| No. | Unit | Parts | | | |
|-----|--------------------------------------|-------|---|-----------------------------|----|
| a | Left lower cabinet unit | | | | |
| b | Left vertical transport unit | ○ | | | |
| c | Paper feed tray 1 and 2 left PG unit | ○ | 1 | Transport roller 11 (Drive) | ×○ |
| d | Vertical transport upper unit | ○ | 1 | Transport roller 13 (Drive) | ×○ |
| | | | 2 | Transport sensor | |

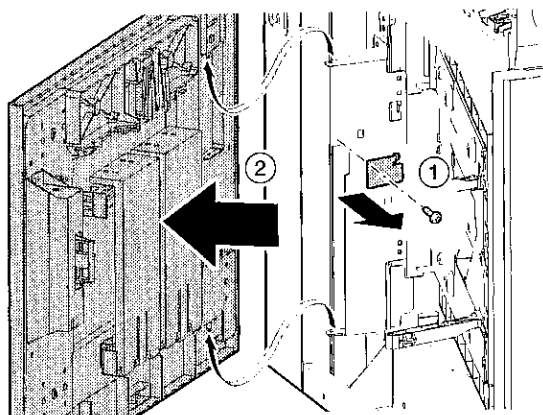


a. Left lower cabinet unit

- 1) Open the left lower cabinet.
- 2) Remove the resin E-ring, and remove the pressure fulcrum shaft.

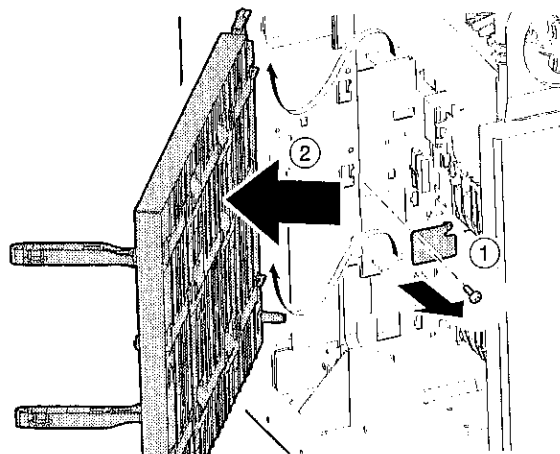


- 3) Remove the left vertical transport PG stopper plate.
- 4) Open the left door, and remove the left lower cabinet unit.



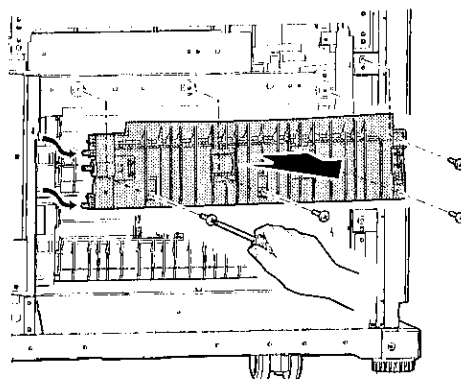
b. Left vertical transport unit

- 1) Remove the left lower cabinet unit. (See "a. Left lower cabinet unit")
- 2) Remove the left vertical transport PG stopper plate.
- 3) Open the left vertical transport unit, and remove it.



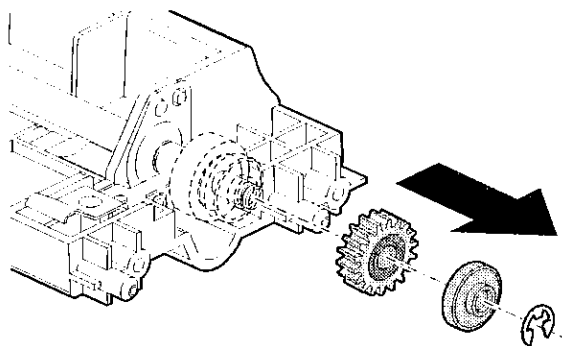
c. Paper feed tray 1 and 2 left PG unit

- 1) Remove the left lower cabinet. (See "a. Left lower cabinet unit")
- 2) Remove the left vertical transport unit. (See "b. Left vertical transport unit")
- 3) Remove the paper feed tray 1 and 2 left PG unit.



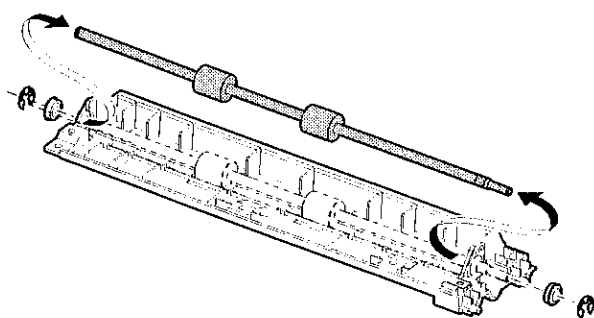
c-1. Transport roller 11 (Drive)

- 1) Remove the paper feed tray 1 and 2 left PG unit. (See "c. Paper feed tray 1 and 2 left PG unit")
- 2) Remove the E-ring, the drive collar, and the one-way gear.



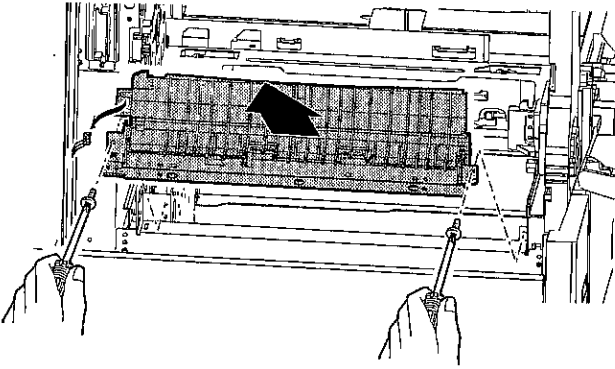
* Be careful of the installing direction.

- 3) Remove the E-ring and the bearing, and remove the transport roller 11 (Drive).

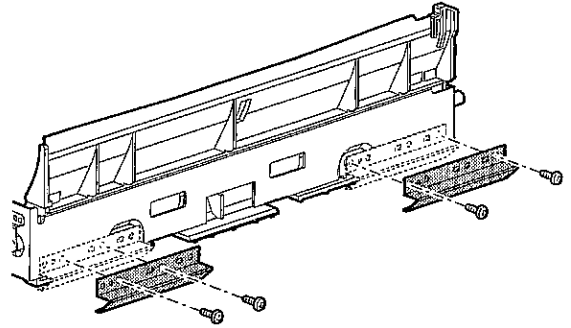


d. Vertical transport upper unit

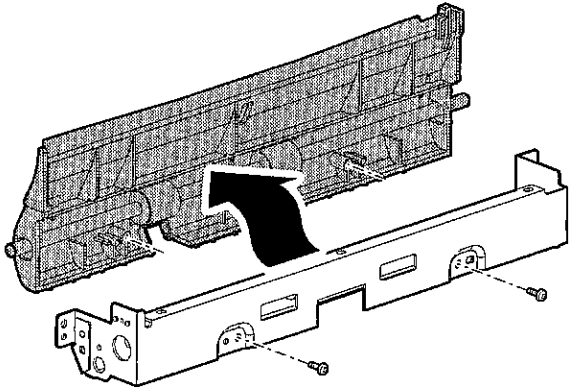
- 1) Open the left door.
- 2) Remove the resist roller unit.
- 3) Disconnect the connector, and remove the vertical transport upper unit.



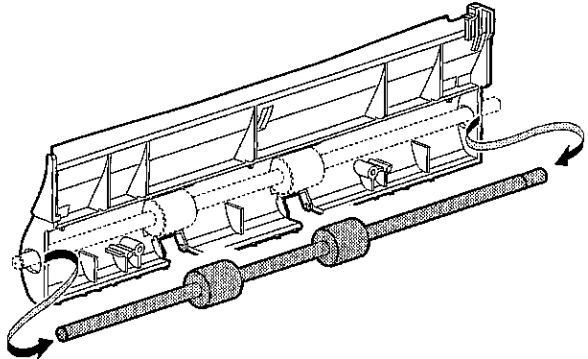
- 3) Remove the upper PG holding plate.



- 4) Remove the vertical transport upper PG.

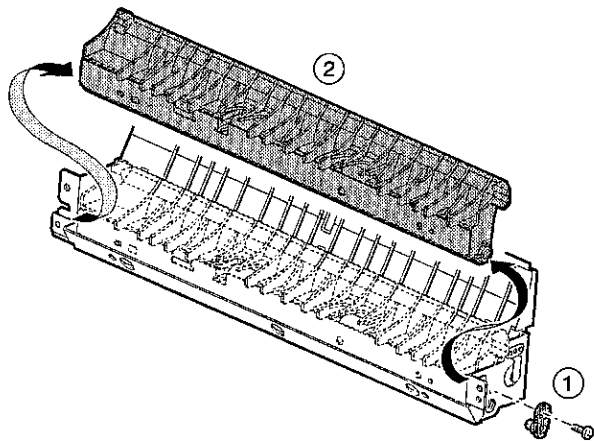


- 5) Remove the transport roller 13 (Drive).

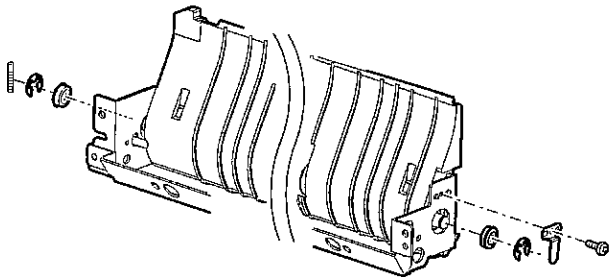


d-1. Transport roller 13 (Drive)

- 1) Remove the upper transport fulcrum plate holder, and remove the vertical transport upper open/close PG.

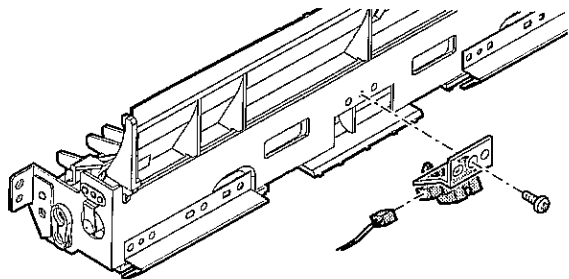


- 2) Remove the open/close PG earth, and remove the drive connection stopper screw and the bearing.



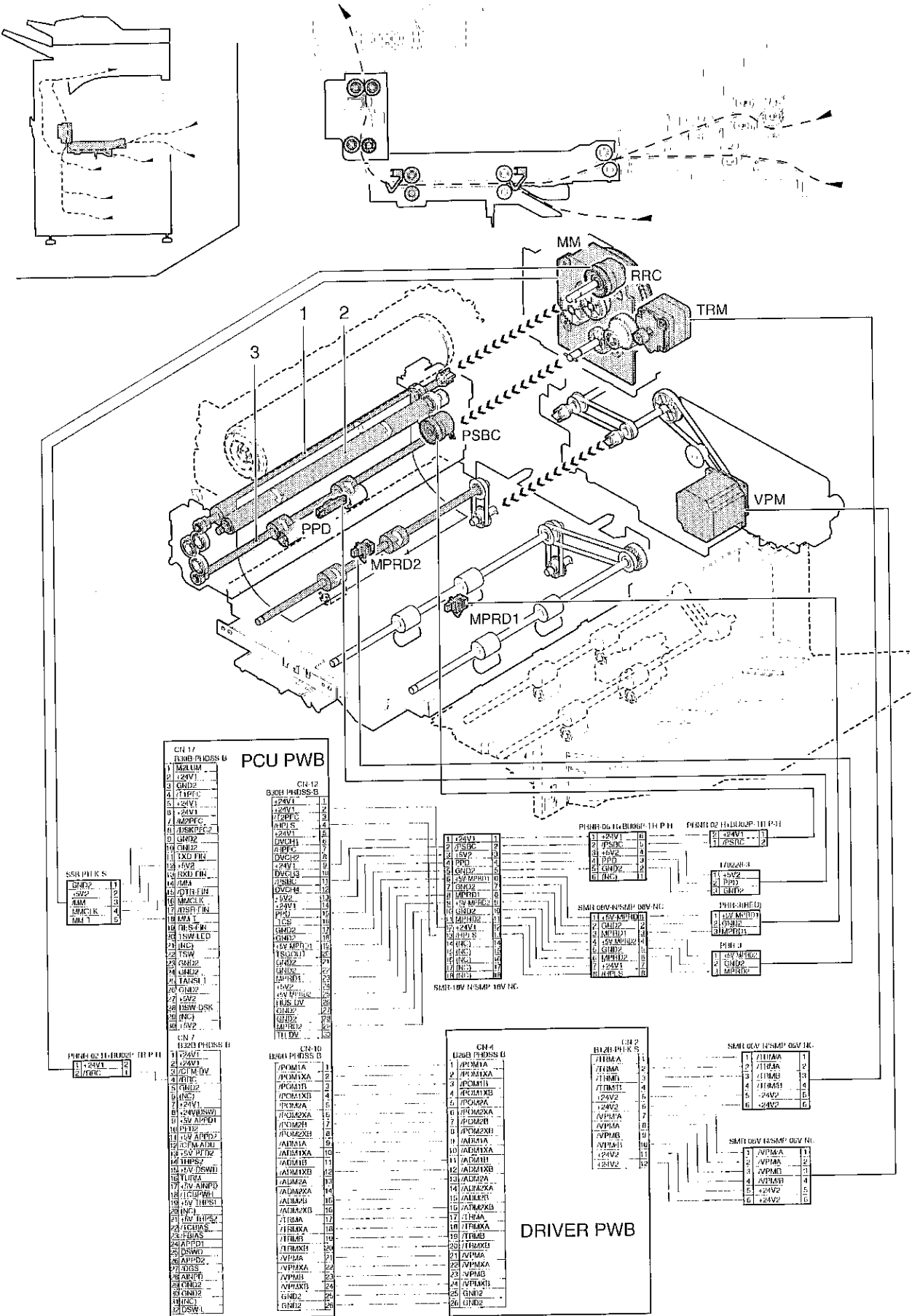
d-2. Transport sensor

- 1) Remove the vertical transport unit. (See "d. Vertical transport upper unit")
- 2) Check the sensors.



(Vertical paper transport section 2)

A. Major parts and signal functions



| Code | Signal name | Name | Function/Operation | Type | Note |
|---------|-------------|---|--|------------------------|---|
| ▲ MPRD1 | MPRD1 | Paper feed tray 2 paper pass detector 1 | Manual feed/paper feed tray 2/LCC paper pass detection | Transmission type | Paper transport system sensor |
| ▲ MPRD2 | MPRD2 | Paper feed tray 2 paper pass detector 2 | Manual feed/paper feed tray 2/LCC paper pass detection | Transmission type | Paper transport system sensor |
| PPD | PPD | Resist roller front paper pass detector | Paper pass detection in front of resist roller | Reflection type | Paper transport system sensor |
| RRC | RRC | Resist roller clutch | Resist roller ON/OFF control | Electromagnetic clutch | |
| PSBC | PSBC | Resist roller brake clutch | Resist roller braking | Electromagnetic clutch | |
| MM | MM | Main motor | Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section. | DC brushless motor | Paper pass |
| TRM | TRM | Resist roller front drive motor | Drives the paper transport roller 15. | Stepping motor | Normal speed mode/ Resist roller front paper transport timing control (Warp amount control) |
| ▲ VPM | VPM | Vertical paper transport motor | Drives the paper transport rollers 4 and 13 | Stepping motor | Normal speed mode |

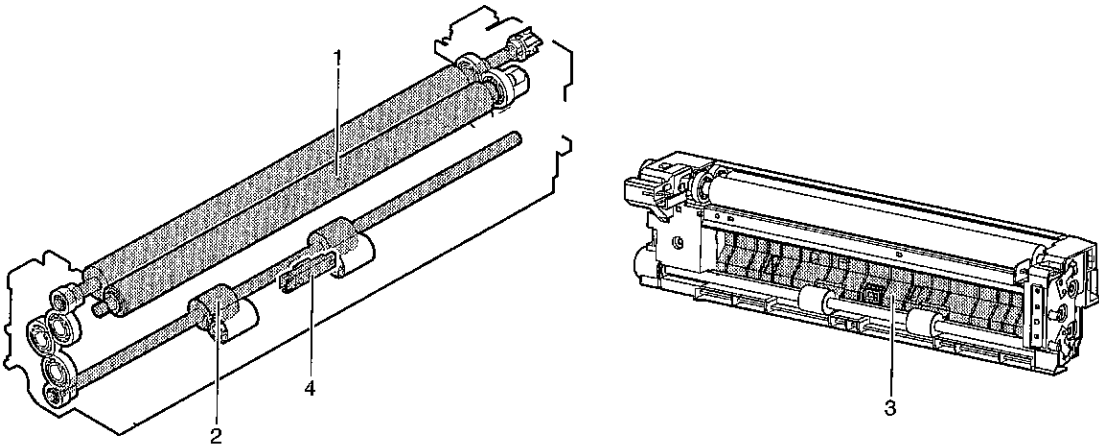
| No. | Name | Function |
|-----|-----------------------|---|
| 1 | Resist roller (Drive) | Transports paper to the transfer section. / Controls the transport timing of paper to adjust the relationship between images and paper. |
| 2 | Resist roller (Idle) | Applies a pressure to paper and the resist roller to provide transport power of the transport roller to paper. |
| 3 | Transport roller 15 | Transports paper to the transport resist roller. |

B. Maintenance and parts replacement

(1) Maintenance list

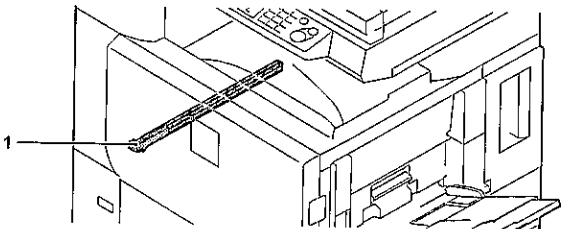
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| | | AR-M550U/N (PM: 250K) | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|--------------------------------------|-----|-----------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|---------------------------|
| | | AR-M620U/N, AR-M700U/N (PM: 300K) | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Unit name | No. | Part name | | | | | | | | | | |
| ▲ Vertical paper transport section 2 | 1 | Resist roller (Idle) | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 2 | Transport rollers | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 3 | Transport paper guides | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 4 | Sensors | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Optical reflection sensor |



×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

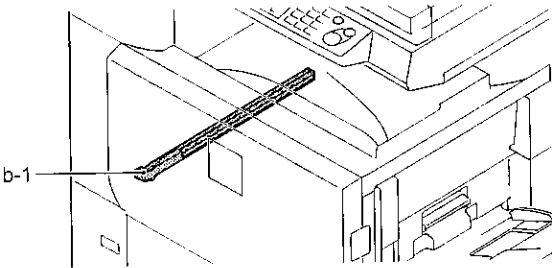
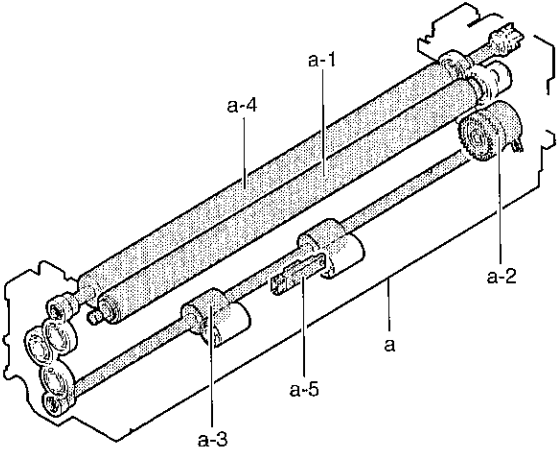
| | | AR-M550U/N (PM: 250K) | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|-----------|-----|-----------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------|
| | | AR-M620U/N, AR-M700U/N (PM: 300K) | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Unit name | No. | Part name | | | | | | | | | | |
| | 1 | Paper dust cleaner | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |



(2) Maintenance and parts replacement

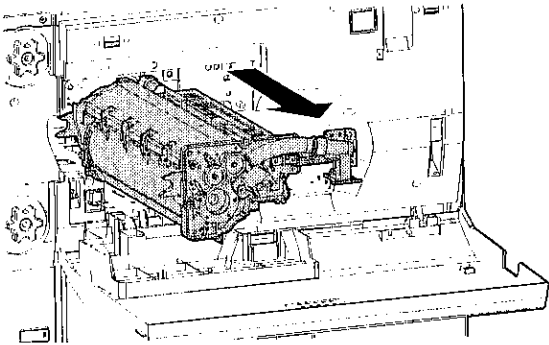
(List of Replacement Parts)

| No. | Unit | Parts | |
|-----|--------------------|-------|---|
| a | Resist roller unit | 1 | Resist roller (Idle) X○ |
| | | 2 | Resis roller break clutch X○ |
| | | 3 | Transport roller 15 X○ |
| | | 4 | Resist roller (Drive) X○ |
| | | 5 | Resist roller front paper pass detector X |
| b | Paper dust cleaner | | X▲ |

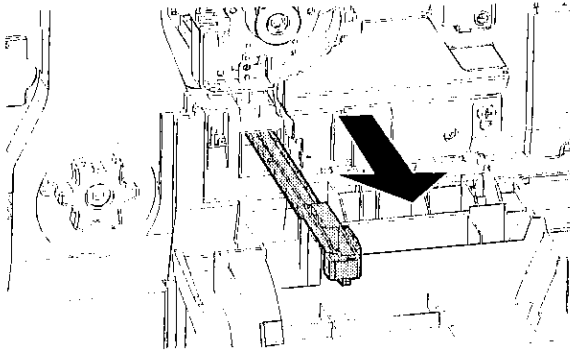


a. Resist roller unit

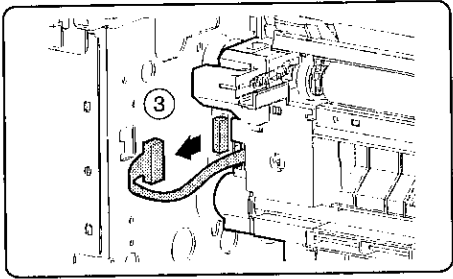
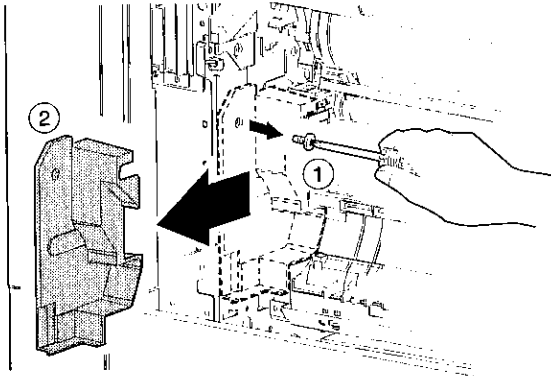
- 1) Open the front door, and open the process cover. Remove the process unit.



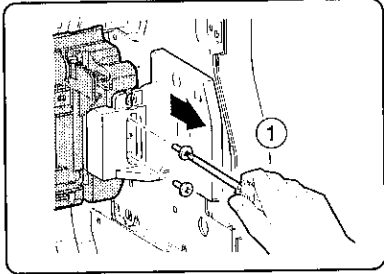
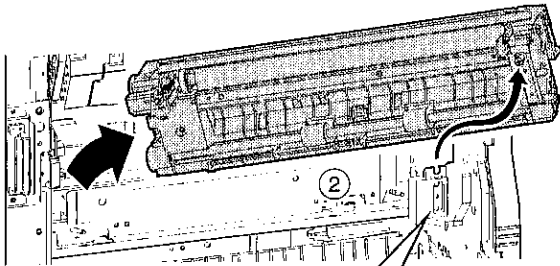
- 2) Remove the paper dust removing unit.



- 3) Remove the rear frame side cover, and disconnect the connector.

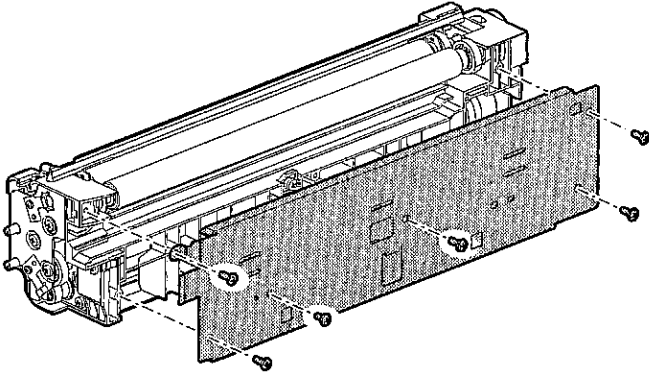


- 4) Remove the resist roller unit.

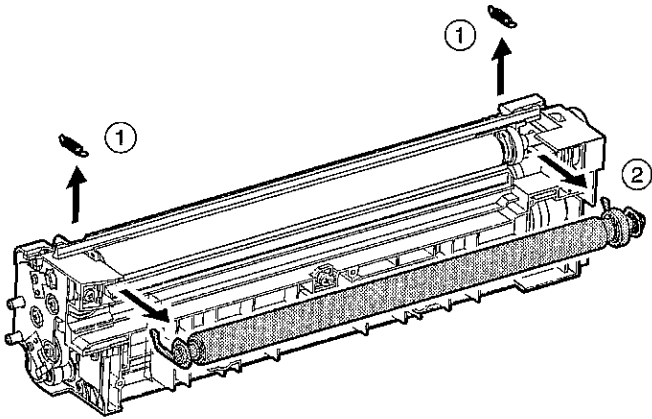


a-1. Resist roller (Idle)

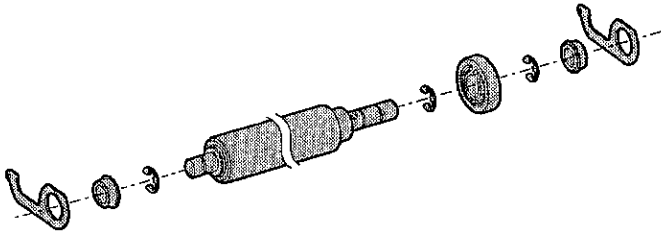
- 1) Remove the resist roller unit. (See "a. Resist roller unit" in this section)
- 2) Remove the cover.



- 3) Remove the follower roller tension spring.
- 4) Remove the resist roller (Idle) unit.

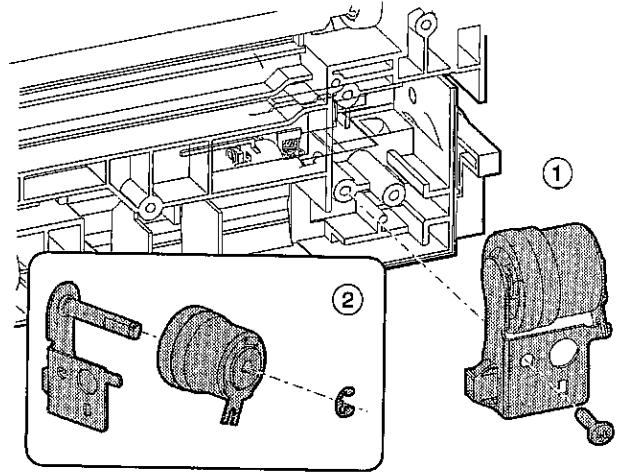


- 5) Remove the bearing, and remove the E-ring, the gear, and the pin.



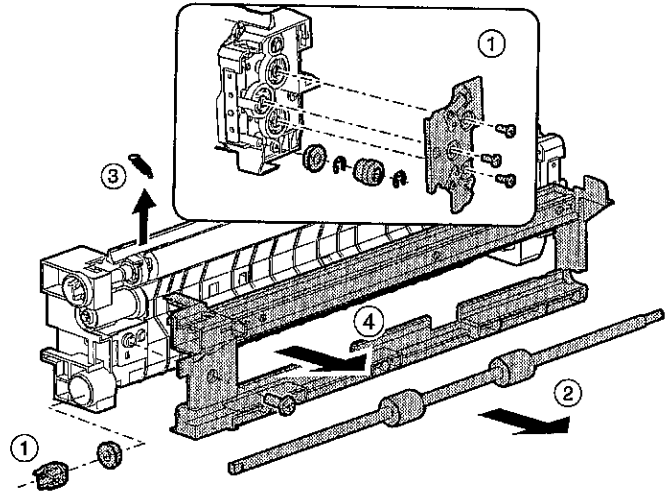
a-2. Resist roller break clutch

- 1) Remove the resist roller unit. (See "a. Resist roller unit" in this section)
- 2) Remove the cover. (See "a-1. Resist roller (Idle)" in this section)
- 3) Remove the resist roller break.
- 4) Remove the E-ring and the resist roller break clutch.



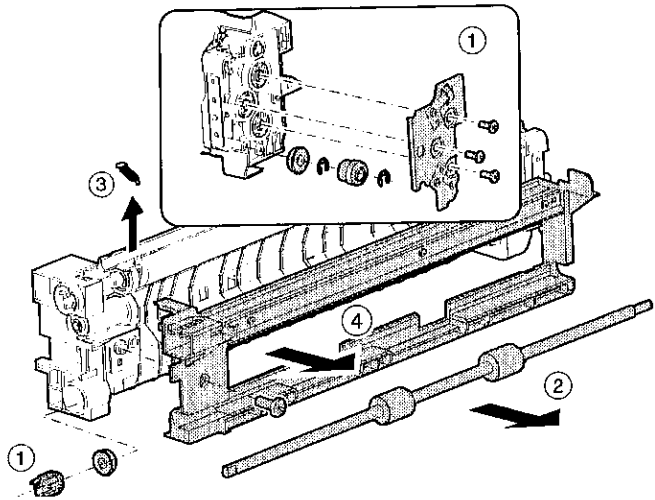
a-3. Transport roller 15

- 1) Remove the resist roller unit. (See "a. Resist roller unit" in this section)
- 2) Remove the front side cover.
- 3) Remove the E-ring, the gear, and the bearing.
- 4) Remove the coupling bearing on the rear side.
- 5) Remove the transport roller 15.

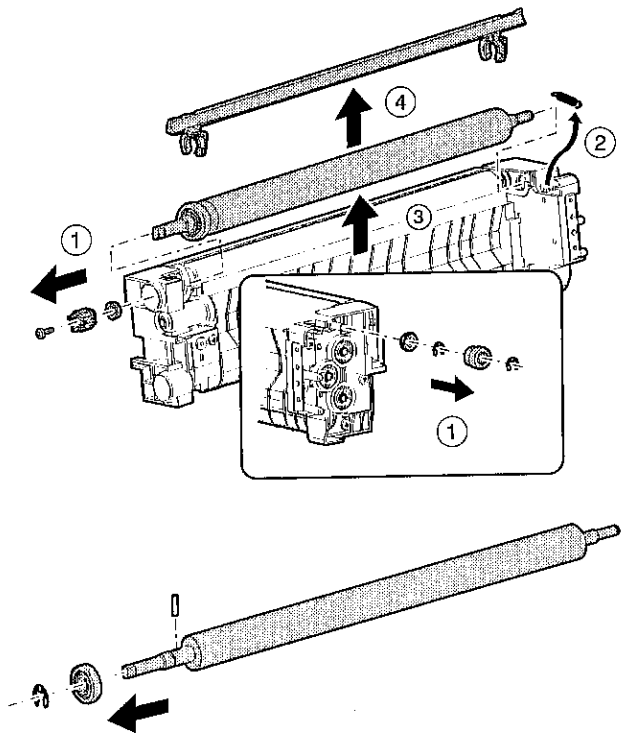


a-4. Resist roller (Drive)

- 1) Remove the resist roller unit. (See "a. Resist roller unit" in this section)
- 2) Remove the follower roller and the tension spring.
- 3) Remove the cover on the front side.
- 4) Remove the transport roller 15.
- 5) Remove the paper guide.

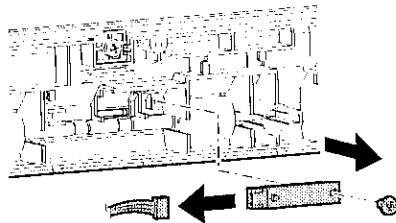


- 6) Remove the E-ring, the gear, and the bearing.
- 7) Remove the coupling on the rear side.
- 8) Remove the resist roller (Drive).



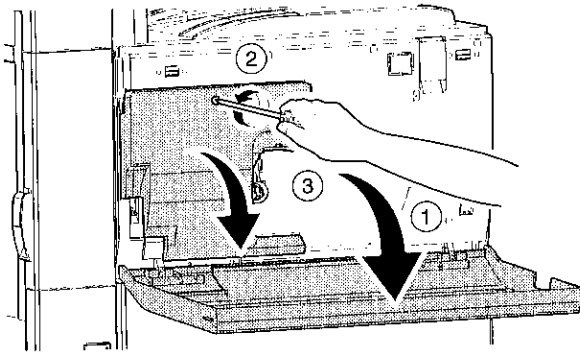
a-5. Resist roller front paper pass detector

- 1) Remove the resist roller unit. (See "a. Resist roller unit" in this section)
- 2) Remove the cover. (See "a-1. Resist roller (Idle)" in this section)
- 3) Remove the sensor.

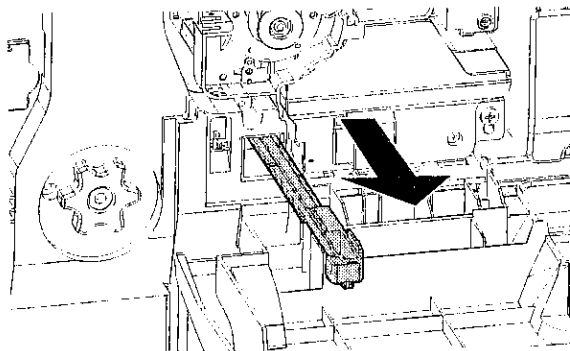


b. Paper dust cleaner

- 1) Open the front cabinet. Open the process DV cover.

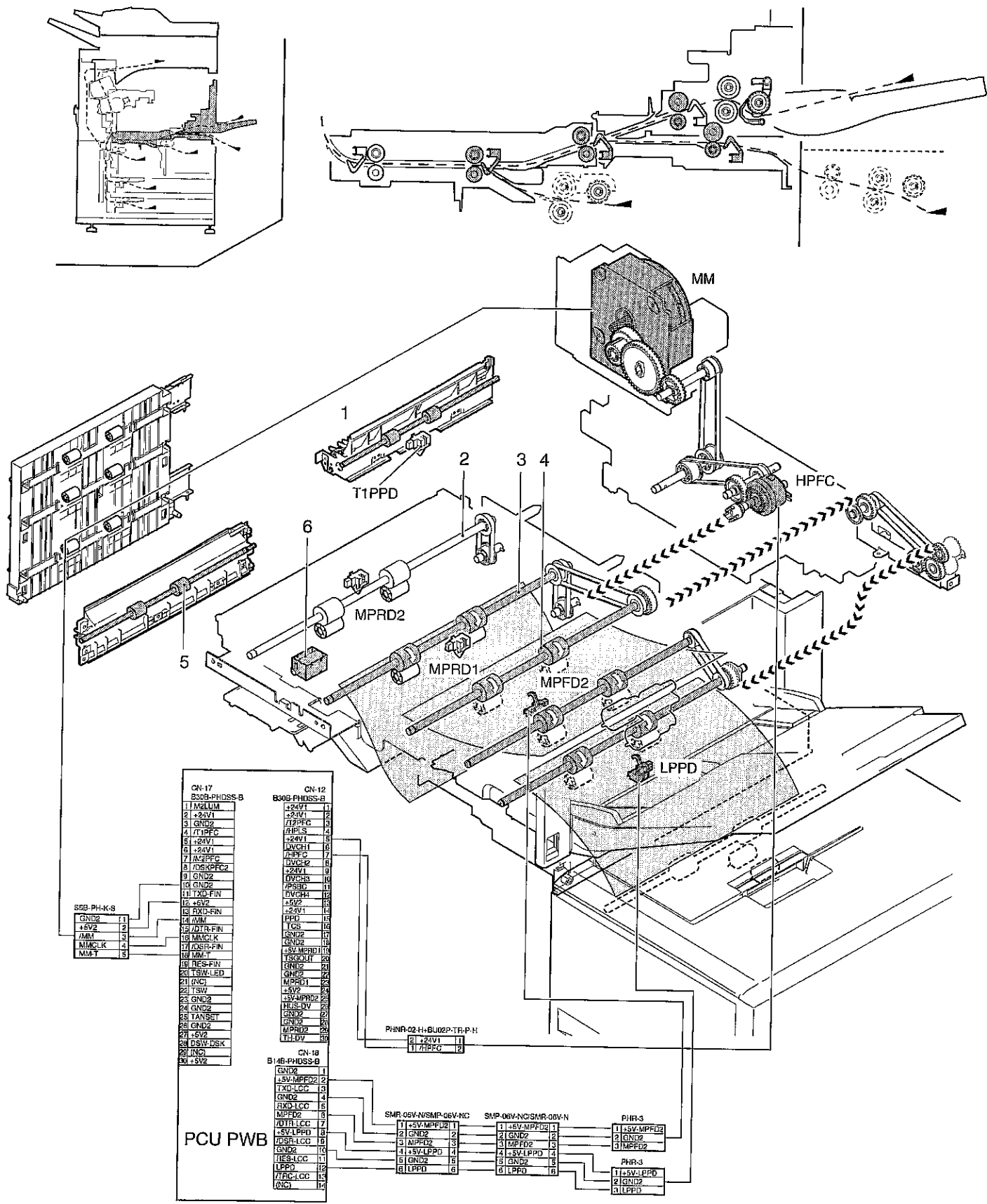


- 2) Remove the paper dust cleaner.



(Horizontal transport section)

A. Major parts and signal functions



| Code | Signal name | Name | Function/Operation | Type | Note |
|------|-------------|------------------------------|--|-------------------|-------------------------------|
| LPPD | LPPD | LCC unit paper pass detector | Paper feed tray No. 5 paper feed (Side LCC) unit paper pass detector | Transmission type | Paper transport system sensor |

| Code | Signal name | Name | Function/Operation | Type | Note |
|-------|-------------|---|---|------------------------|-------------------------------|
| MPFD2 | MPFD2 | Manual feed paper pass detector 2 | Manual tray and LCC unit paper pass detection | Transmission type | Paper transport system sensor |
| MM | MM | Main motor | Drives the paper feed trays 1, 2, 3, and 4, and the manual paper feed section. | DC brushless motor | Paper pass |
| HPFC | HPFC | Horizontal paper transport clutch | Manual paper feed, paper feed tray 2 section, LCC paper transport roller ON/OFF control | Electromagnetic clutch | |
| MPRD1 | MPRD1 | Paper feed tray 2 paper pass detector 1 | Manual feed/paper feed tray 2, LCC paper pass detection | Transmission type | Paper transport system sensor |
| MPRD2 | MPRD2 | Paper feed tray 2 paper pass detector 2 | Manual feed/paper feed tray 2, LCC paper pass detection | Transmission type | Paper transport system sensor |
| T1PPD | T1PPD | Manual feed paper pass detector (Paper feed tray 1) | Paper feed tray 1 paper pass detection | Transmission type | Paper transport system sensor |

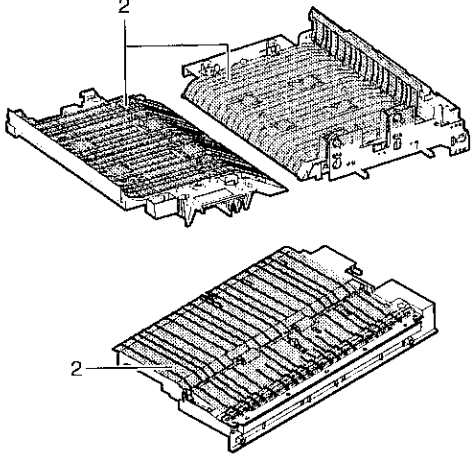
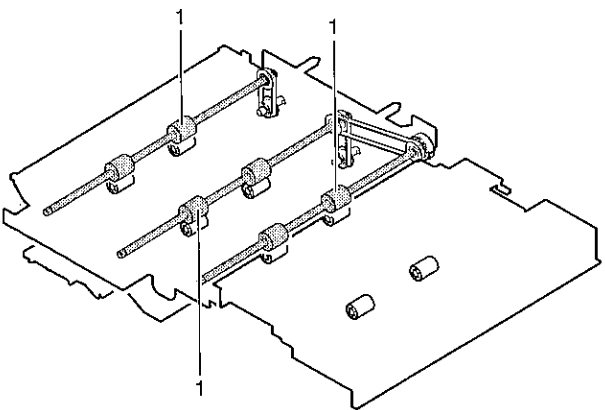
| No. | Name | Function |
|-----|---------------------------|---|
| 1 | Transport roller 15 | Transports paper to the transport resist roller. |
| 2 | Transport roller 4 | Transports paper from the transport roller 3 to the transport roller 15. |
| 3 | Transport roller 3 | Transports paper from the paper feed tray 2 and the transport roller 2 to the transport roller 3. |
| 4 | Transport roller 2 | Transports paper from the manual paper feed and transport roller 2 to the transport roller 3. |
| 5 | Transport roller 13 | Transports to the transport roller 15. |
| 6 | Paper guide lock solenoid | Lock the horizontal transport paper guide. |

B. Maintenance and parts replacement

(1) Maintenance list

X: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

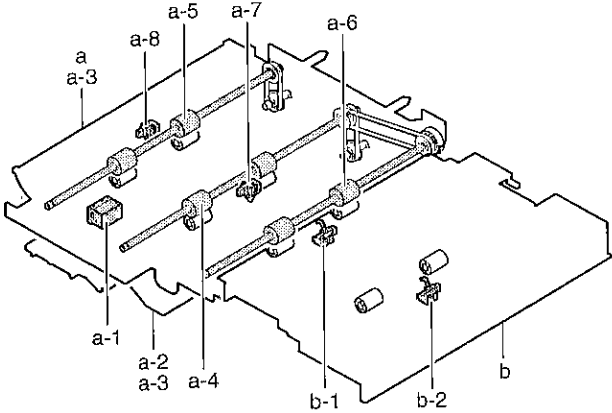
| Unit name | No. | Part name | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|--------------------------|-----|------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------|
| | | | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Vertical paper transport | 1 | Transport rollers | X | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 2 | Transport paper guides | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |



(2) Maintenance and parts replacement

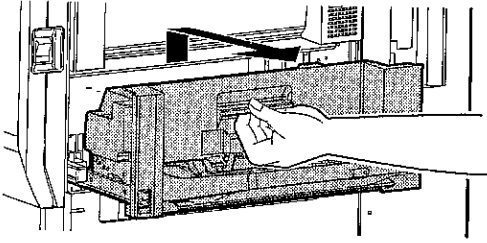
(List of Replacement Parts)

| No. | Unit | Parts |
|-----|-----------------------------|---|
| a | Relay pass unit | 1 Paper guide lock solenoid |
| | | 2 Lower paper guide unit ○ |
| | | 3 Paper guides ○ |
| | | 4 Transport roller 3 (Drive) X○ |
| | | 5 Transport roller 4 (Drive) X○ |
| | | 6 Transport roller 2 (Drive) X○ |
| | | 7 Paper feed tray 2 paper pass detector 1 |
| | | 8 Paper feed tray 2 paper pass detector 2 |
| b | No. 5 paper feed relay unit | 1 Manual paper pass detector 2 |
| | | 2 No. 5 paper feed paper pass detector |

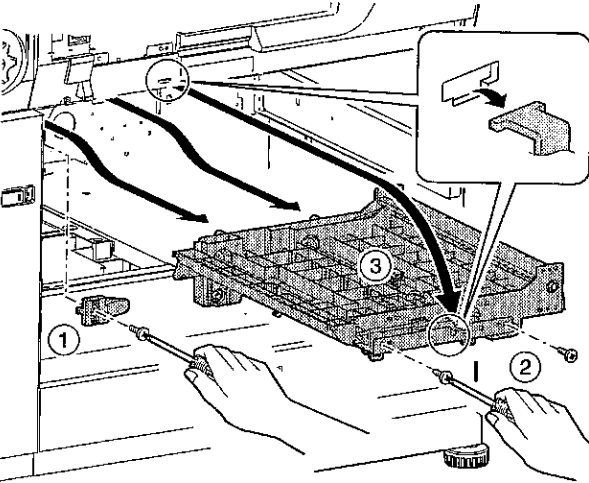
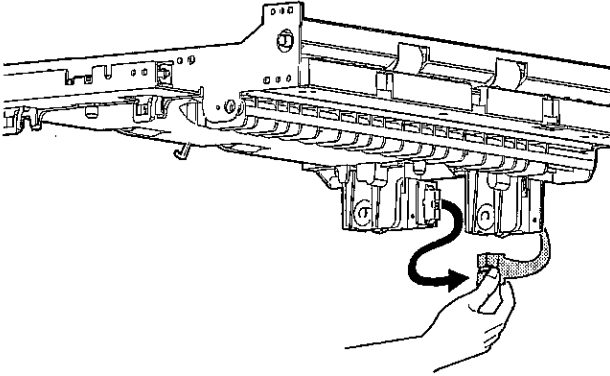


a. Relay pass unit

- 1) Pull out the multi manual paper feed tray unit.



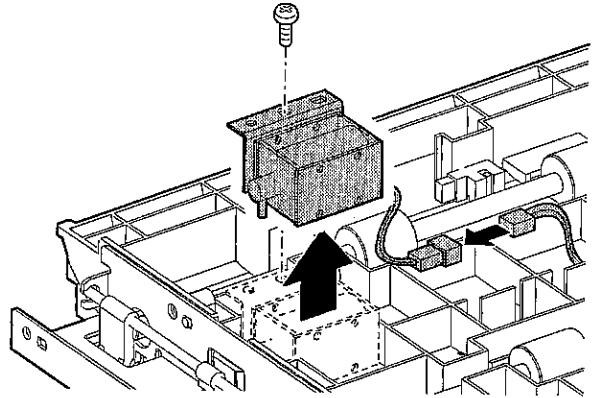
- 2) Remove the paper feed tray units 1 and 2. (See "a. Paper feed tray units 1 and 2" in "Paper feed tray sections 1 and 2")
- 3) Remove the toner cartridge, the OPC drum, and the toner hopper, and remove the front door.
- 4) Remove the parts.



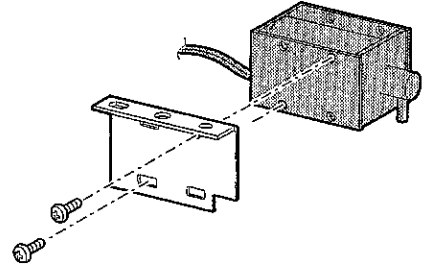
- 5) Disconnect the connector, and remove the relay pass unit.

a-1. Paper guide lock solenoid

- 1) Remove the relay pass unit. (See "a. Relay pass unit" in this section)
- 2) Disconnect the connector, and remove the paper guide lock solenoid unit.

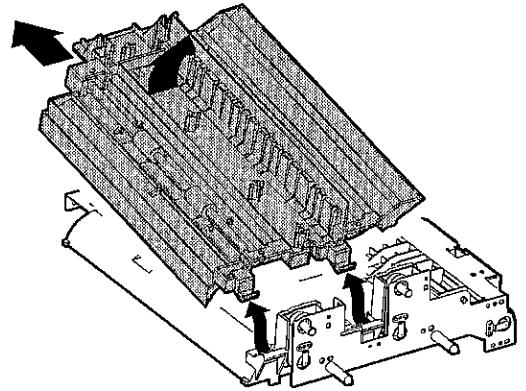


- 3) Remove the paper guide lock solenoid.



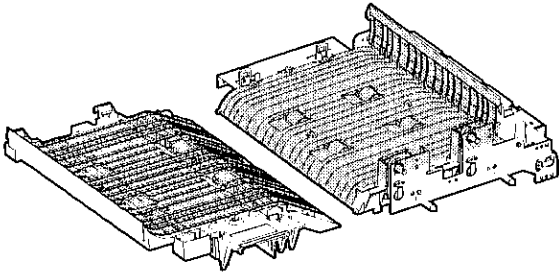
a-2. Lower paper guide unit

- 1) Remove the relay pass unit. (See "a. Relay pass unit" in this section)
- 2) Remove the metal fixture.
- 3) Remove the lower paper guide unit.



a-3. Paper guides

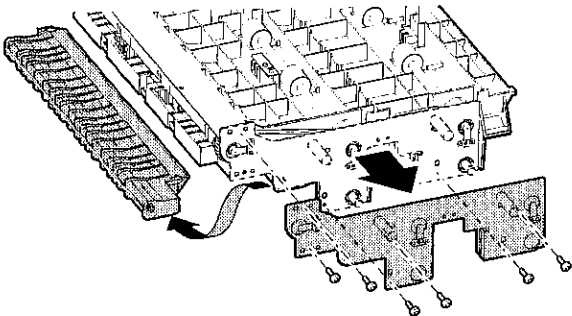
- 1) Remove the relay pass unit. (See "a. Relay pass unit" in this section)
- 2) Remove the lower paper guide unit. (See "a-2. Lower paper guide unit" in this section)
- 3) Clean the paper guides.



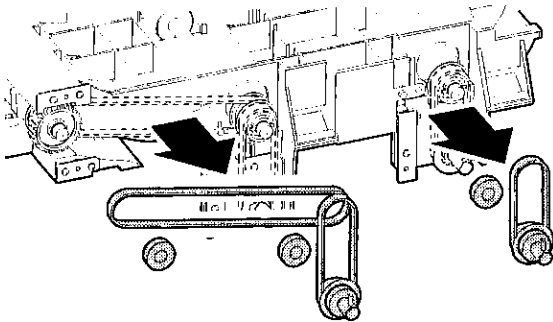
a-4. Transport roller 3 (Drive)

a-5. Transport roller 4 (Drive)

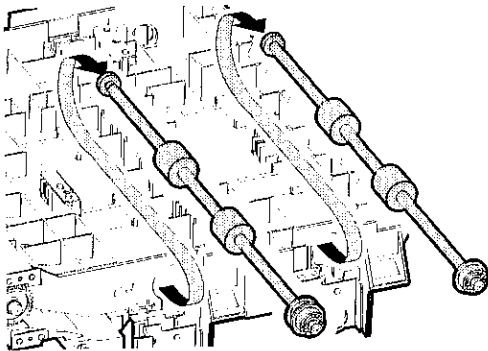
- 1) Remove the relay pass unit. (See "a. Relay pass unit" in this section)
- 2) Remove lower paper guide unit. (See "a-2. Lower paper guide unit" in this section)
- 3) Remove the rear positioning plate, and remove the paper feed port PG of the paper feed tray 1 and 2.



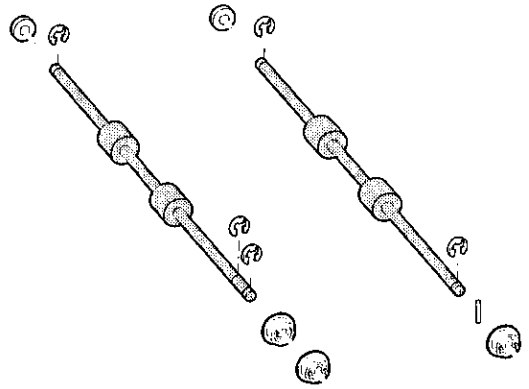
- 4) Remove the bearing, the belt, and the relay pass drive shaft unit.



- 5) Remove the transport roller 3 and 4 (Drive).

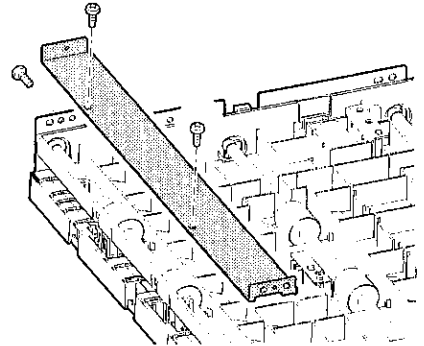


- 6) Remove the E-ring from transport roller 3 and 4 (Drive), and remove the belt pulley.

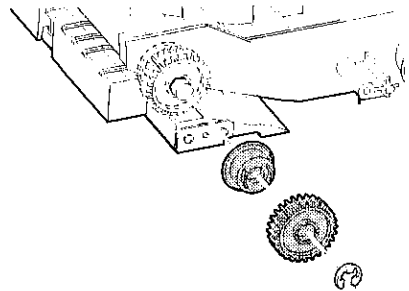


a-6. Transport roller 2 (Drive)

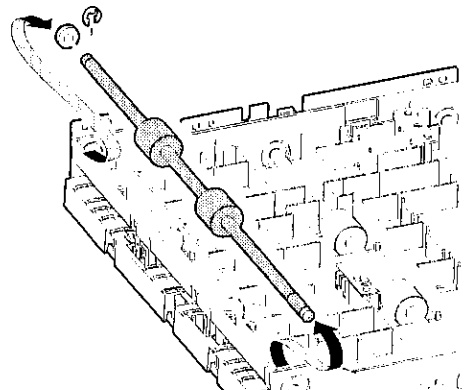
- 1) Remove the relay pass unit. (See "a. Relay pass unit" in this section)
- 2) Remove the lower paper guide unit. (See "a-2. Lower paper guide unit" in this section)
- 3) Remove the rear positioning plate, and remove the paper feed PG of the paper feed tray 1/2. (See "a-4. Transport roller 3 (Drive)" in this section)
- 4) Remove the paper entry side upper plate.



- 5) Remove the E-ring, and remove the gear and the belt pulley.



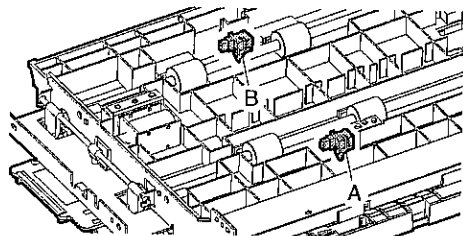
- 6) Remove the transport roller 2 (Drive) unit.
- 7) Remove the E-ring from the transport roller 2 (Drive).



a-7. Paper feed tray 2 paper pass detector 1

a-8. Paper feed tray 2 paper pass detector 2

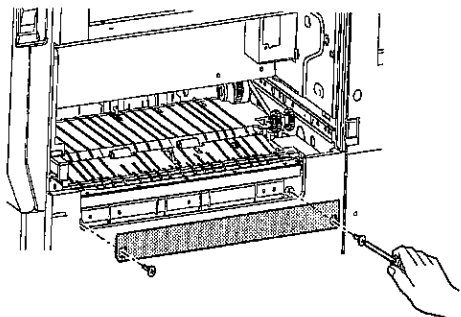
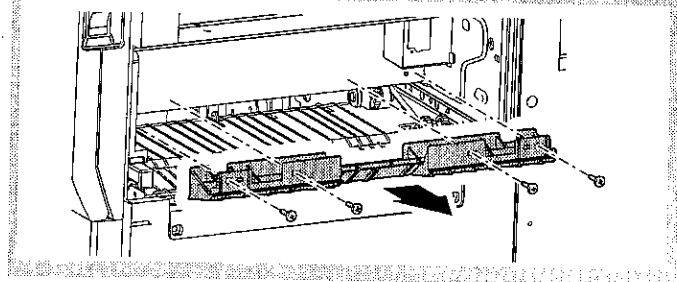
- 1) Remove the relay pass unit.
- 2) Check the paper feed tray 2 paper pass detector 1 (A) and the paper feed tray 2 paper pass detector 2 (B).



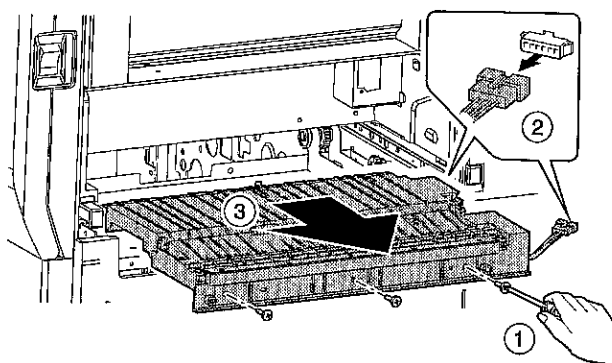
b. No. 5 paper feed relay unit

- 1) Remove the multi paper feed unit.

- ▲ 2) Remove the manual feed relay paper guide upper.



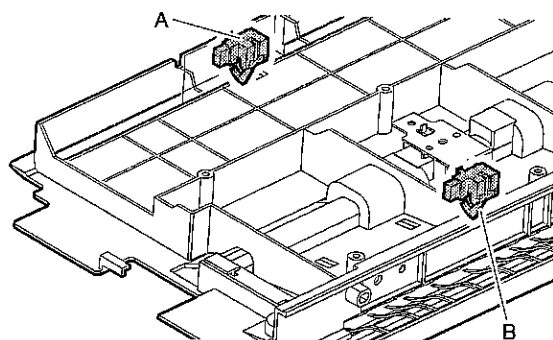
- 3) Lift the No. 5 paper feed relay unit, and remove the connector.
- 4) Remove the No. 5 paper feed relay unit.



b-1. Manual paper pass detector 2

b-2. No. 5 paper feed paper pass detector

- 1) Remove the multi manual paper feed unit.
- 2) Remove the No. 5 paper feed unit.
- 3) Check the manual paper pass detector 2 (A) and the No. 5 paper feed paper pass detector (B).



The paper exit and turning section discharges paper which is transported from the fusing section, and detects paper full. It also turns paper to transport it to the duplex or the finisher.

B. Major parts and signal functions



| Code | Signal name | Name | Function/Operation | Type | Note |
|----------|-------------|--|--|--------------------|---|
| POD1 | POD1 | Paper exit detector 1 | Paper exit detection from fusing | Transmission type | Paper transport system sensor |
| POD2 | POD2 | Paper exit detector 2 | Paper pass detection from paper exit | Transmission type | Paper transport system sensor |
| POD3 | POD3 | Paper exit detector 3 | Paper exit detection to upper section paper exit tray (Full detection) | Transmission type | Paper transport system sensor |
| POM1 | POM1 | Paper exit motor 1 | Drives the paper transport roller 16. | Stepping motor | Selection of Normal speed/ High speed |
| POM2 | POM2 | Paper exit motor 2 | Drives the paper exit roller 1. | Stepping motor | Selection of Normal speed/ High speed/ Reverse rotation |
| ▲ CFM-U1 | CFM-U1 | Fusing cooling fan motor 1 (Paper exit, duplex (ADU) section) (Front surface) | Discharges heat generated in the fusing section. | DC brushless motor | PWM control |
| ▲ CFM-U3 | CFM-U3 | Fusing cooling fan motor 3 (Paper exit, duplex (ADU) section) (Front surface) | Discharges heat generated in the fusing section. | DC brushless motor | PWM control |
| ▲ CFM-U4 | PWM-RSV1 | Fusing cooling fan motor 4 (Paper exit, duplex (ADU) section) (Paper exit section rear side) | Cools paper which is discharged to the inner tray. | DC brushless motor | PWM control |
| INTPWB | | Paper exit temperature sensor | Paper exit section temperature detection | | |

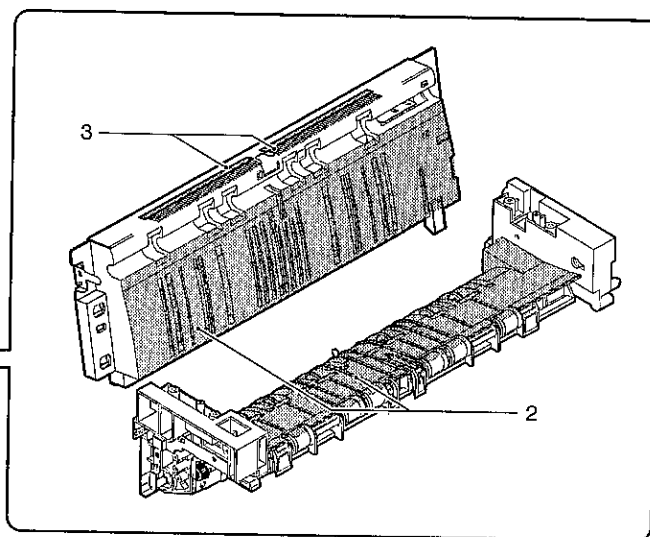
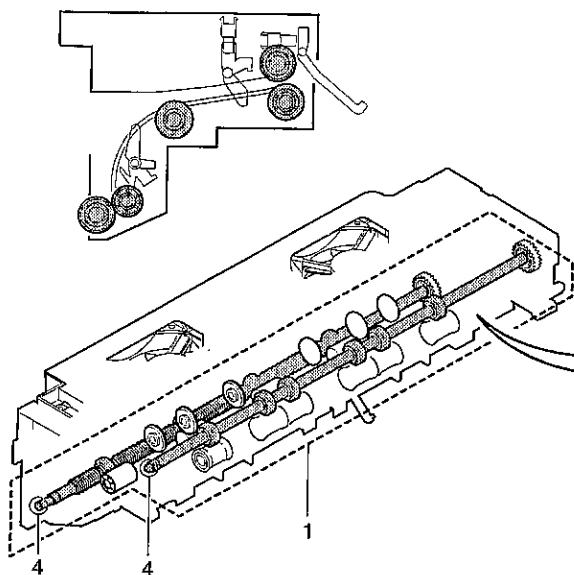
| No. | Name | Function |
|-----|---------------------|---|
| 1 | Transport roller 16 | Transports paper from the fusing roller to the paper exit roller 1. |
| 2 | Paper exit roller 1 | Discharges paper to the paper exit tray. / Switchbacks paper. |

C. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

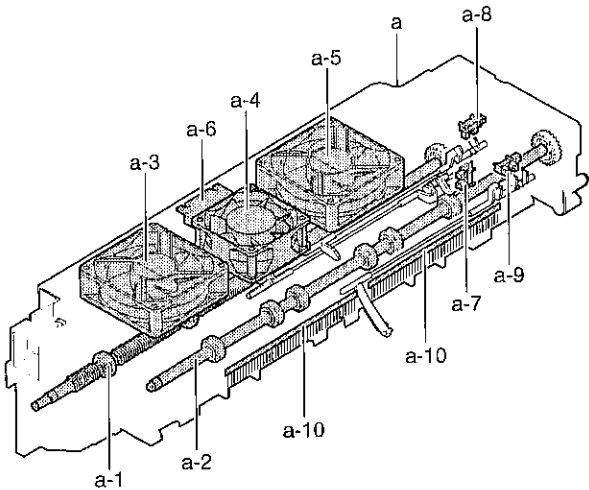
| Unit name | No. | Part name | When calling | AR-M550U/N (PM: 250K) AR-M620U/N, AR-M700U/N (PM: 300K) | | | | | | | | Remark |
|----------------------------|-----|---------------------------|--------------|--|------|------|-------|-------|-------|-------|-------|---------------|
| | | | | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | |
| Paper exit reverse section | 1 | Transport rollers | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 2 | Transport paper guides | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 3 | Discharge brush | × | × | × | × | × | × | × | × | × | |
| | 4 | Shaft (Conduction grease) | | | | | | | | | | UKOG-0012QSZZ |



(2) Maintenance and parts replacement

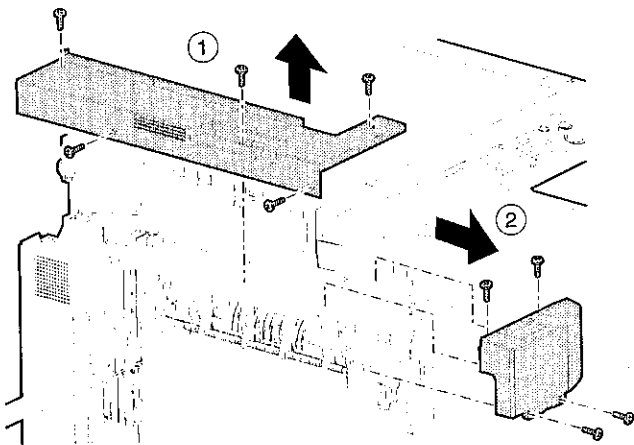
(List of Replacement Parts)

| No. | Unit | Parts | | |
|-----|-----------------|-------|-------------------------------|----|
| a | Paper exit unit | 1 | Transport roller 16 | ○X |
| | | 2 | Paper exit roller 1 | ○X |
| | | 3 | Fusing cooling fan motor 1 | |
| | | 4 | Fusing cooling fan motor 3 | |
| | | 5 | Fusing cooling fan motor 4 | |
| | | 6 | Paper exit temperature sensor | |
| | | 7 | Paper exit detector 1 | |
| | | 8 | Paper exit detector 2 | |
| | | 9 | Paper exit detector 3 | |
| | | 10 | Discharge brush | X |

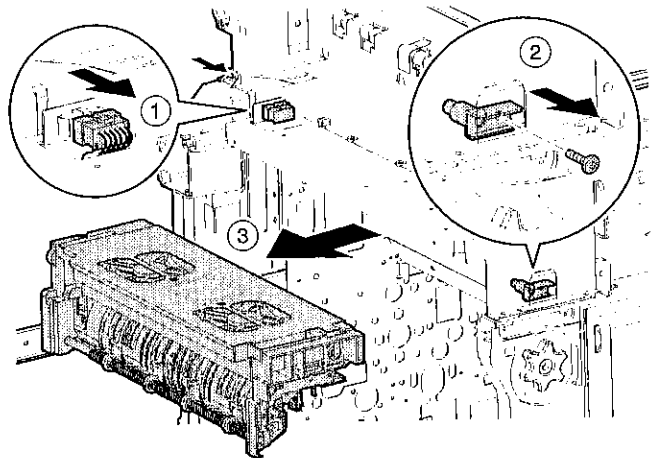


a. Paper exit unit

- 1) Open the left door.
- 2) Remove the SPF paper exit tray.
- 3) Remove the top left cabinet.
- 4) Remove the front left cabinet.

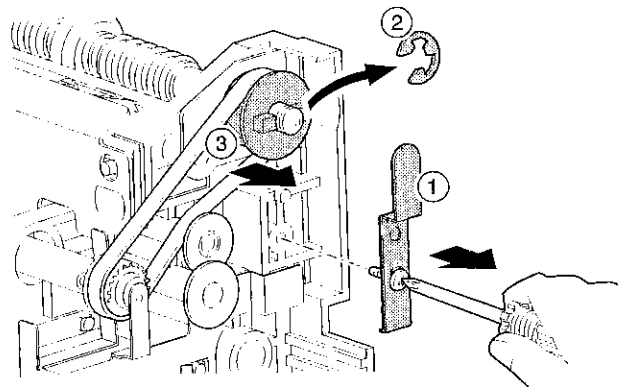


- 5) Disconnect the connectors.
- 6) Remove the front fixing bracket.
- 7) Remove the paper exit unit in the arrowed direction.

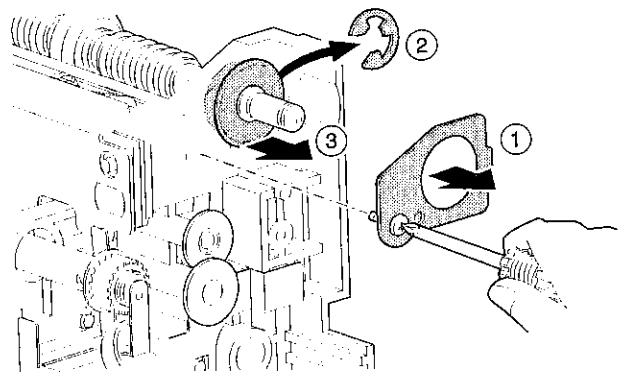


a-1. Transport roller 16

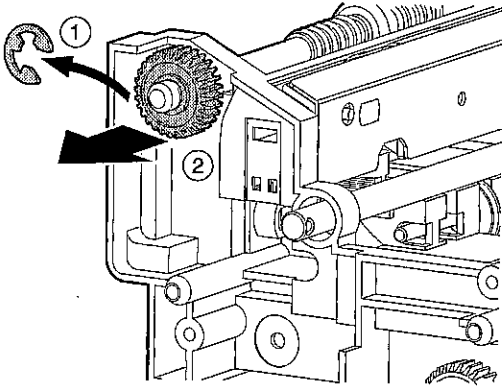
- 1) Remove the paper exit unit. (See "a. Paper exit unit" in this section)
- 2) Remove the ground plate. Remove the E-ring to remove the pulley.



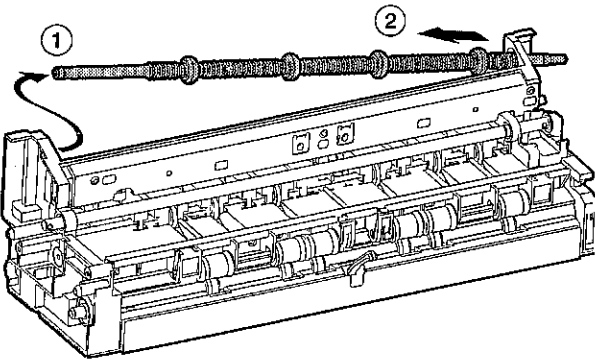
- 3) Remove the stopper. Remove the E-ring to remove the bearing.



4) Remove the E-ring to remove the gear.

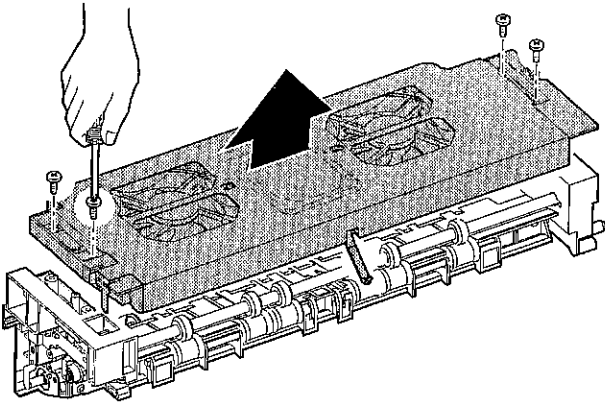


5) Remove the transport roller in the arrowed direction.

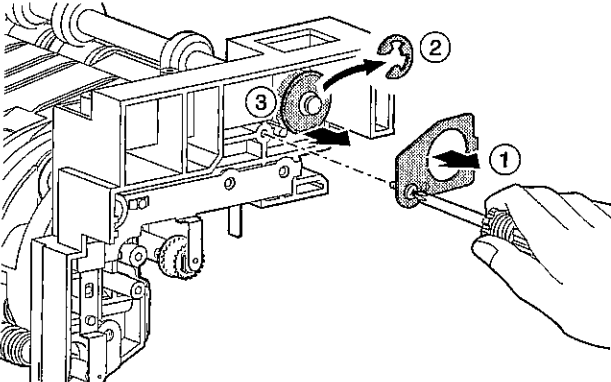


a-2. Paper exit roller 1

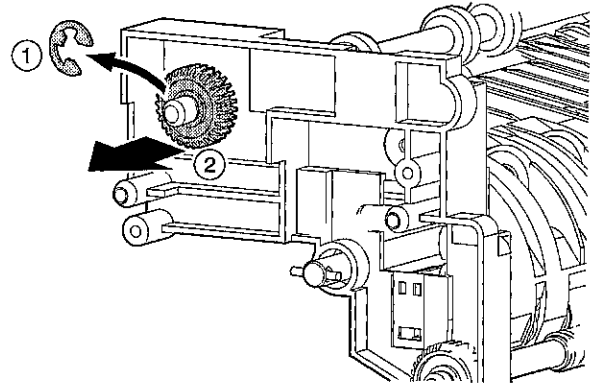
- 1) Remove the paper exit unit. (See "a. Paper exit unit" in this section)
- 2) Remove the upper unit.



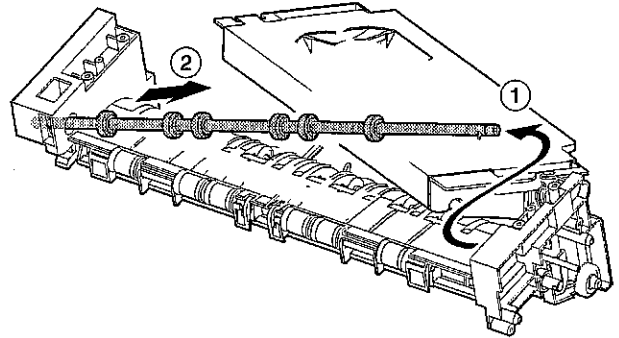
3) Remove the stopper. Remove the E-ring to remove the bearing.



4) Remove the E-ring to remove the gear.



5) Remove the paper exit roller 1 in the arrowed direction.

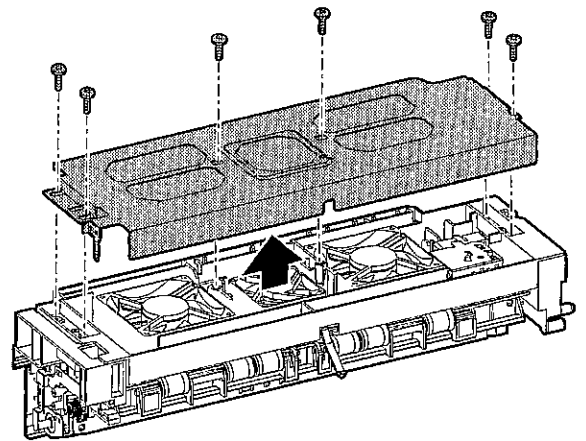


a-3. Fusing cooling fan motor 1

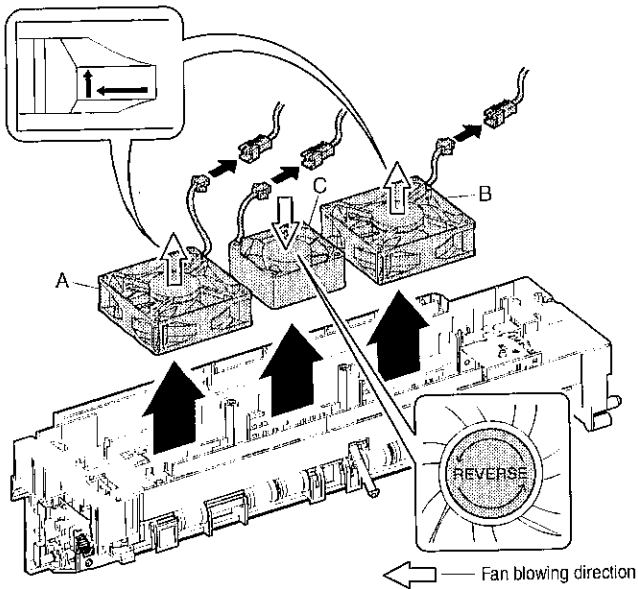
a-4. Fusing cooling fan motor 3

a-5. Fusing cooling fan motor 4

- 1) Remove the paper exit unit. (See "a. Paper exit unit" in this section)
- 2) Remove the upper cover.



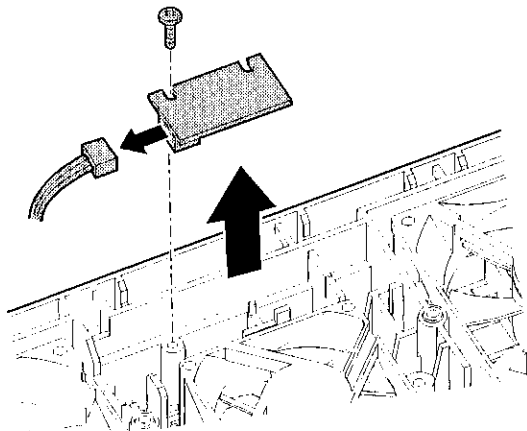
3) Remove the fusing cooling fan motor 1 (A), 3 (B), and 4 (C).



NOTE: When assembling, be careful of the direction of the fan.

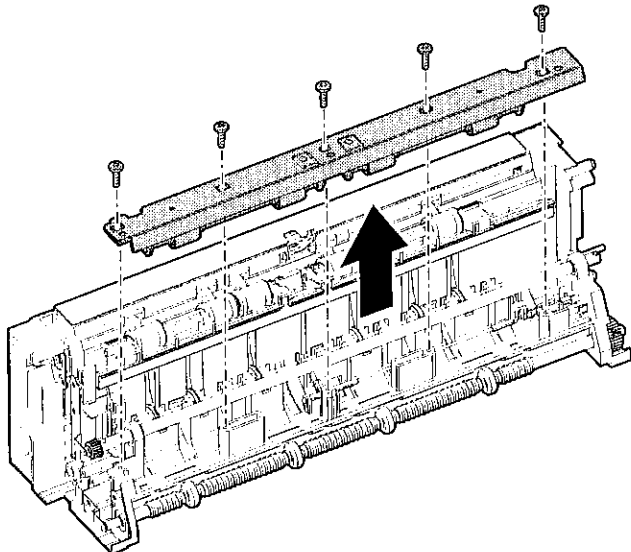
a-6. Paper exit temperature sensor

- 1) Remove the upper cover. (See "a-3. Fusing cooling fan motor 1" in this section)
- 2) Remove the paper exit temperature sensor.

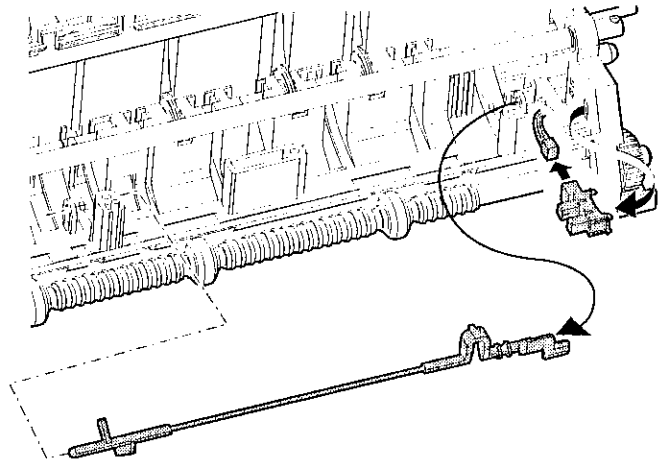


a-7. Paper exit detector 1

- 1) Remove the paper exit unit. (See "a. Paper exit unit" in this section)
- 2) Remove the follower roller unit.



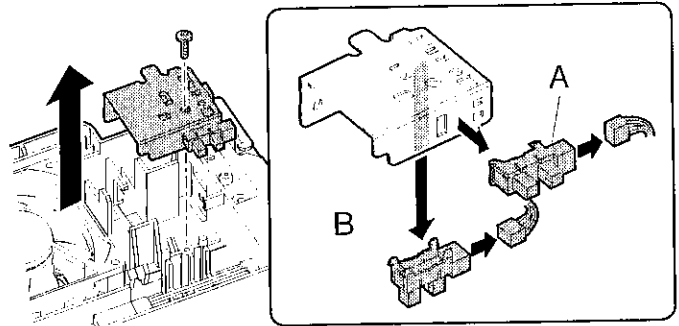
3) Remove the paper exit detection 1 detector.



a-8. Paper exit detector 2

a-9. Paper exit detector 3

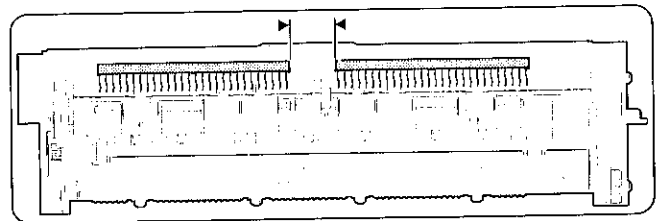
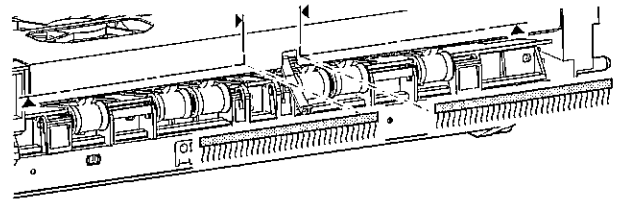
- 1) Remove the paper exit unit. (See "a. Paper exit unit" in this section)
- 2) Remove the upper cover. (See "a-3. Fusing cooling fan motor 1" in this section)
- 3) Remove the paper exit detection 2 detector (B) and the paper exit detection 3 detector (A).



a-10. Discharge brush

- 1) Remove the paper exit unit. (See "a. Paper exit unit" in this section)
- 2) Remove the discharge brush.

▲ * When attaching the discharge brush, fit the edge with the mark line.



When duplex print is selected, paper one surface of which was printed is switched back to feed to the duplex section to make duplex print.

B. Major parts and signal functions



| Code | Signal name | Name | Function/Operation | Type | Model | Note |
|---------|-------------|--|---|--------------------------|-------|--|
| AINPD | AINPD | Duplex (ADU) paper entry detector | Duplex (ADU) paper entry detection, detection of paper exit to finisher | Transmission type | | Paper transport system sensor |
| APPD1 | APPD1 | Duplex (ADU) paper pass detector 1 | Duplex (ADU) upstream paper pass detection | Transmission type | | Paper transport system sensor |
| APPD2 | APPD2 | Duplex (ADU) paper pass detector 2 | Duplex (ADU) midstream paper pass detection | Transmission type | | Paper transport system sensor |
| DSW-ADU | DSW-ADU | Duplex (ADU) cover open/close detector | Duplex (ADU) cover open/close detection | Transmission type | | Door switch |
| PFD2 | PFD2 | Paper pass detector 2 | Paper pass detection (Left door unit) from duplex (ADU)/Paper feed tray 1, 3, 4 | Transmission type | | Paper transport system sensor |
| THPS2 | THPS2 | Transferbelt contact/separation home position sensor 2 | Transfer belt separation home position detection 2 | Transmission type | | Other sensors, switch |
| ADM1 | ADM1 | Duplex (ADU) motor 1 | Drives the paper exit rollers 2 and the paper transport roller 19. | Stepping motor | | High speed only |
| ADM2 | ADM2 | Duplex (ADU) motor 2 | Drives the paper transport roller 20 and 21. | Stepping motor | | Selection of Normal speed/High speed |
| TURM | TURM | Transfer separation motor | Drives and separates the transfer belt. | DC brush motor | | The transfer belt is pressed on the OPC drum only during printing. |
| DGS | DGS | Paper exit gate solenoid | Drives the paper exit gate. | Electromagnetic solenoid | | |
| DSW-L | DSW-L | Left door open/close detector | Left door open/close detection | Micro switch | | Door switch |

| No. | Name | Function |
|-----|-----------------------------|---|
| 1 | Transport roller 21 (Drive) | Transports paper from the transport roller 20 to the transport roller 15. |
| 2 | Transport roller 20 (Drive) | Transports paper from the transport roller 19 to the transport roller 21. |
| 3 | Transport roller 19 (Drive) | Transports paper from the transport roller 2 to the transport roller 20. |
| 4 | Paper exit roller 1 | Discharges paper. / Transports paper to the duplex (ADU) section. |

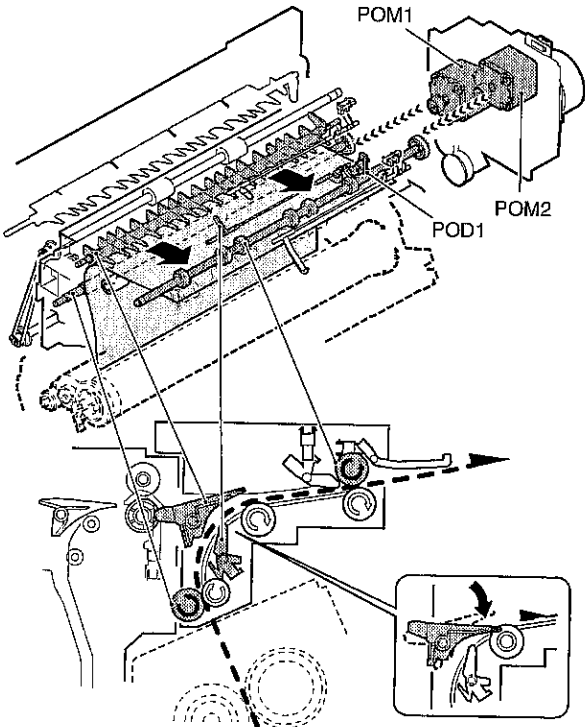
C. Operational descriptions

(1) Paper transport operation in duplex print

a. Switchback operation and transport to the reverse section

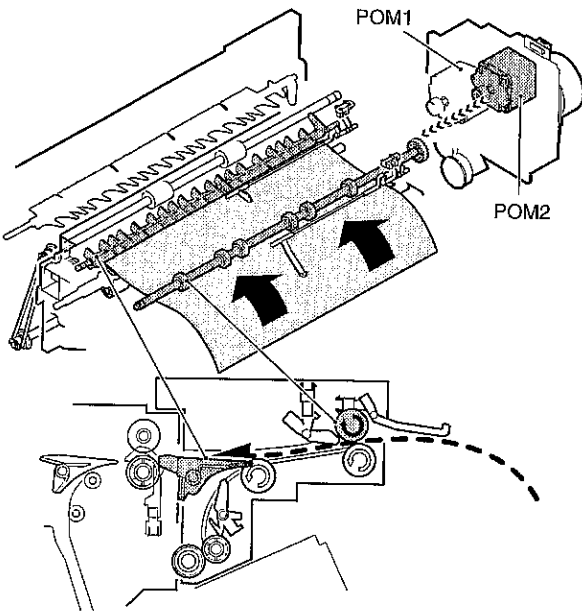
- 1) The paper transported from the fusing section is sent to the paper exit roller 1 (which is driven by the paper exit motor 2 (POM2)) with the transport roller 16 (which is driven by the paper exit motor 1 (POM1)).

At this time, paper is passed under the paper exit guide. After paper passing, the paper exit gate guide falls down by its own weight.

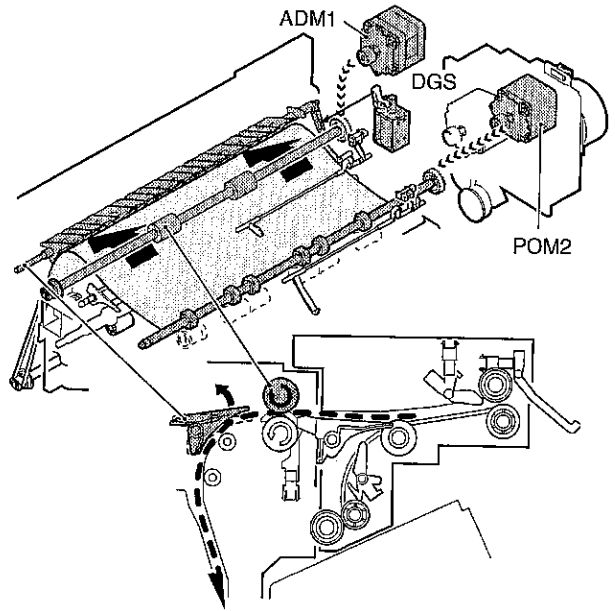


- 2) When the specified time has passed from detection of the paper lead edge by POD1 (paper exit detection from fusing), POM2 rotates in the normal direction, then rotates in the reverse direction in the specified time. (The rotation time differs depending on the paper size.)
- 3) When POM2 rotates reversely, paper is transported to the reverse section.

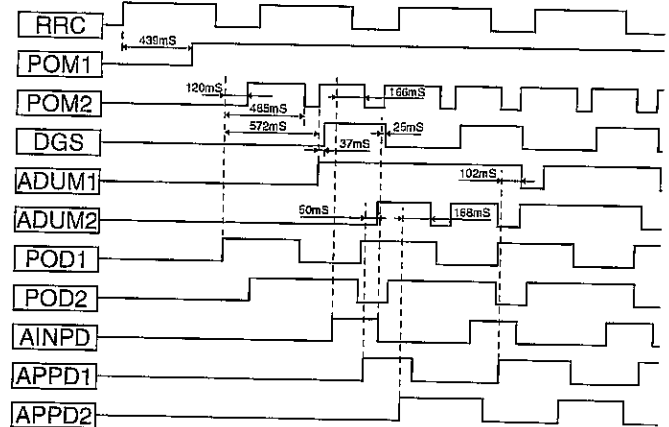
At that time, paper is passed over the paper exit gate guide which fell down by its own weight.



- 4) When the specified time has passed from reverse rotation of POM2, DGS (paper exit guide) turns on for a certain time and paper is sent to the reverse section.



- 5) POM2 stops after passing the specified time from detection the paper lead edge by AINPD (duplex paper entry detection). Its rotation is changed from reverse direction to normal direction to transport the next paper.



b. Paper transport speed in duplex print

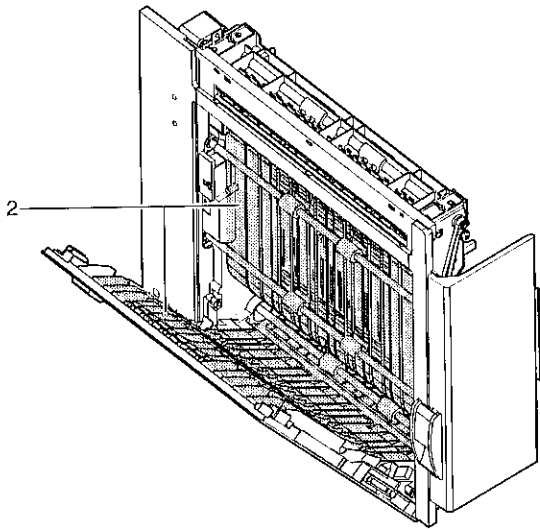
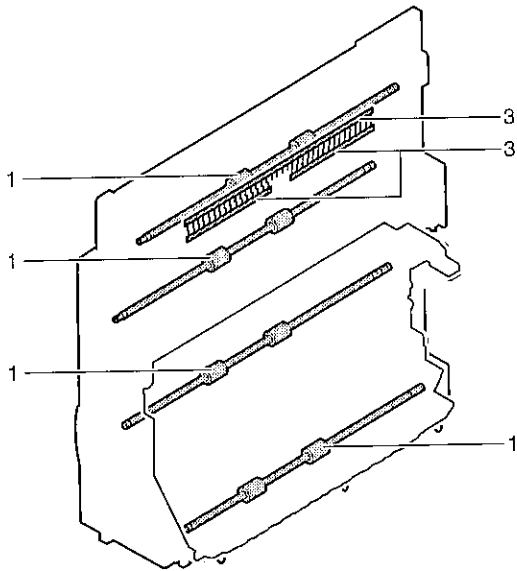
The transport speed in duplex print is changed to the high speed (800mm/sec) to increase the job speed in some positions of paper.

The transport speed is changed to the high speed in the Following positions:

- 1) From when the paper rear edge passes the fusing section to when switchback operation is started.
- 2) From when switchback operation is started to when a certain amount of paper is transported after passing APPD1 (Paper pass detection sensor in upstream of duplex).
- 3) After that, paper is stopped at the duplex paper feed position and fed to the machine again. (The paper feed speed to the machine is 335mm/sec.)

D. Maintenance and parts replacement

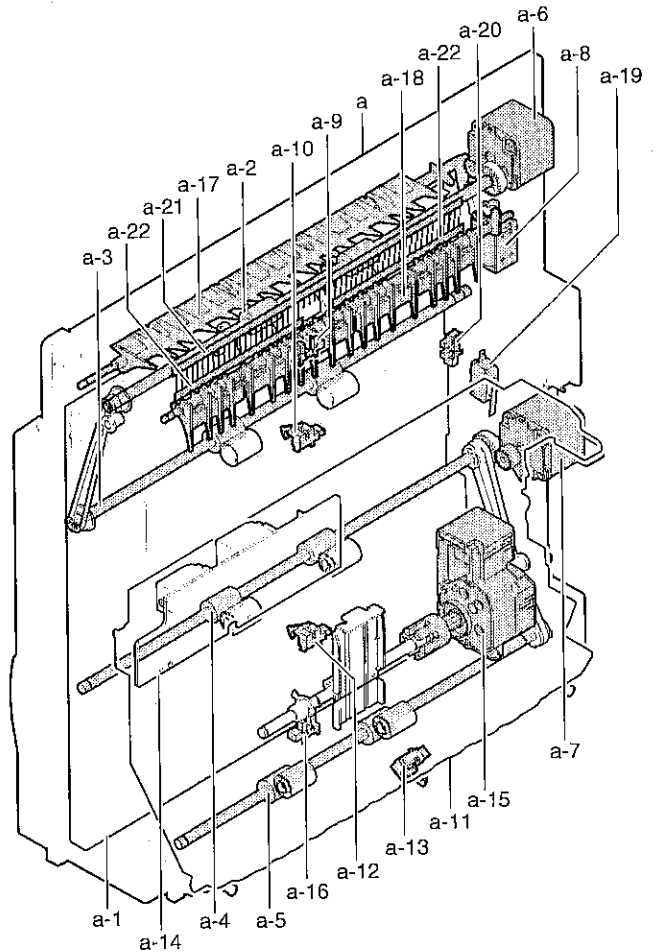
| Unit name | No. | Part name | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|-----------|-----|------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------|
| | | | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Duplex | 1 | Transport rollers | X | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 2 | Transport paper guides | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |



(1) Maintenance and parts replacement

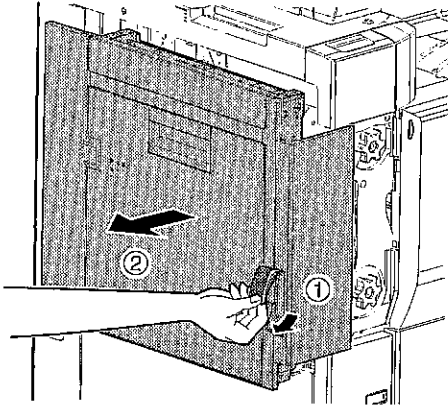
(List of Replacement Parts)

| No. | Unit | Parts | |
|-----|----------------|-------|---|
| a | Left door unit | 1 | ADU opening/closing door |
| | | 2 | Paper exit roller 2 X○ |
| | | 3 | Transport roller 19 X○ |
| | | 4 | Transport roller 20 X○ |
| | | 5 | Transport roller 21 X○ |
| | | 6 | Duplex motor 1 |
| | | 7 | Duplex motor 2 |
| | | 8 | Paper exit gate solenoid |
| | | 9 | Duplex paper entry detector |
| | | 10 | Duplex paper pass detector 1 |
| | | 11 | Left door transport paper guide R unit |
| | | 12 | Duplex paper pass detector 2 |
| | | 13 | Paper pass detector 2 |
| | | 14 | Transfer high voltage transformer |
| | | 15 | Transfer separation motor |
| | | 16 | Transfer belt separation home position sensor |
| | | 17 | Paper exit gate |
| | | 18 | Switchback gate |
| | | 19 | Left door open/close detector |
| | | 20 | Duplex cover open/close detector |
| | | 21 | Fusing discharge brush X |
| | | 22 | Reversing discharge brush X |

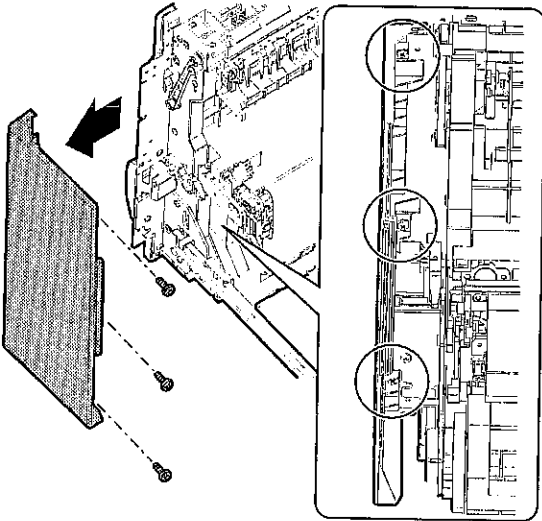


a. Left door unit

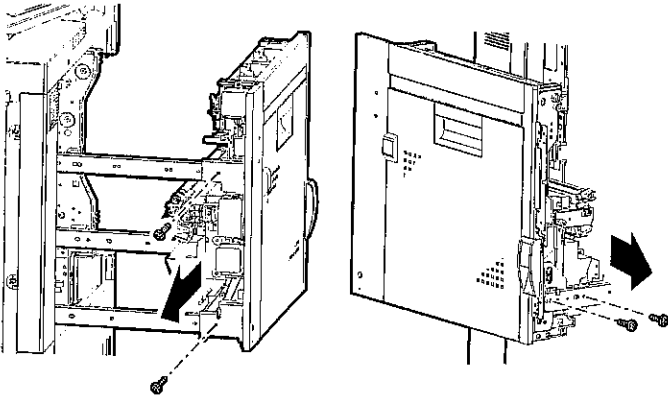
- 1) Pull out the left door.



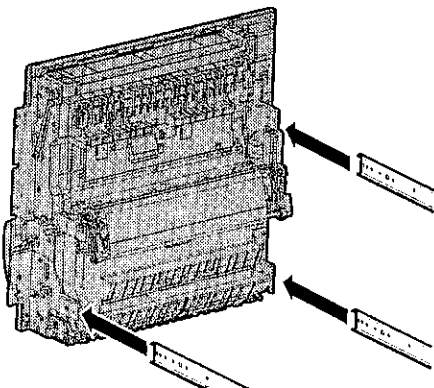
- 2) Remove the front cabinet.



- 3) Remove the fixing screw.

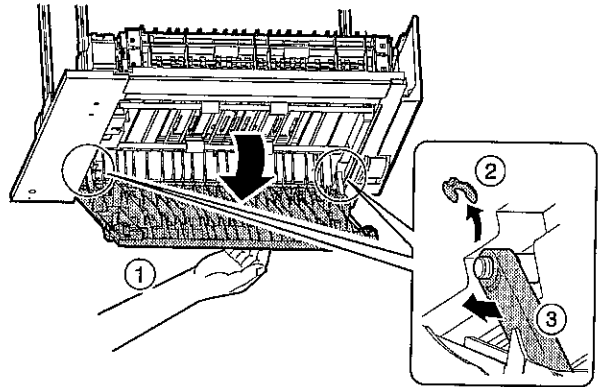


- 4) Remove the left door unit.

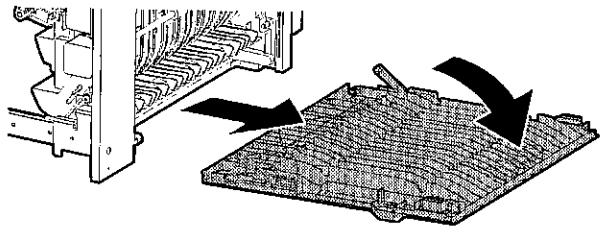


a-1. ADU opening/closing door

- 1) Pull out the left door.
2) Remove the stopper section plastic E-ring.

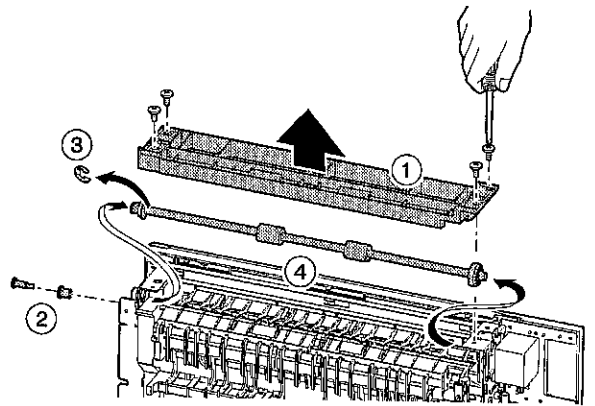


- 3) Remove the stopper from the fulcrum shaft to remove the opening/closing door in the arrowed direction.

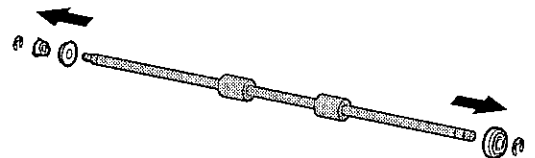


a-2. Paper exit roller 2

- 1) Pull out the left door.
2) Remove the ADU opening/closing door.
3) Remove the ADU paper exit upper paper guide.
4) Remove the ADU brake collar.
5) Remove the E-ring to remove the transport roller 2 assembly.



- 6) Remove the E-ring to remove the bearing, pulley, gear and pin from the paper exit roller.

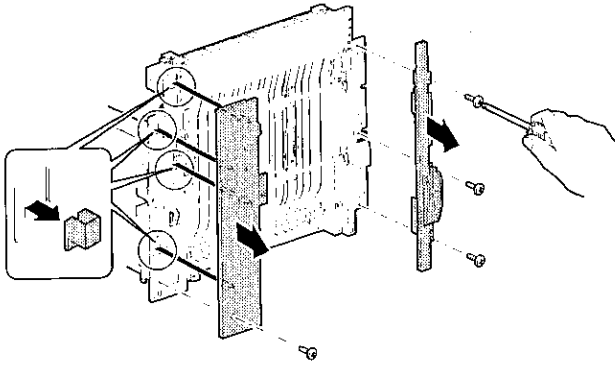


a-3. Transport roller 19

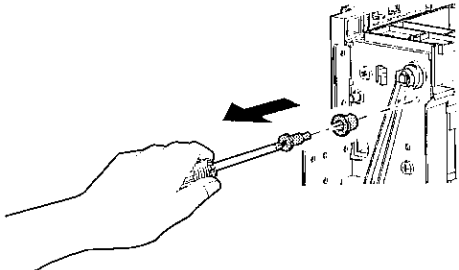
a-4. Transport roller 20

a-5. Transport roller 21

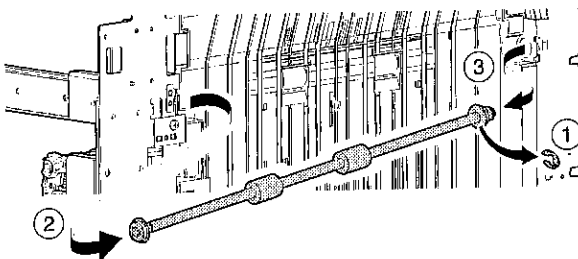
- 1) Pull out the left door.
- 2) Remove the ADU opening/closing door.
- 3) Remove the left door cabinet F.
- 4) Remove the left door cabinet R.



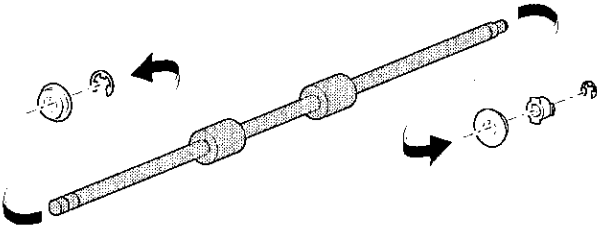
5) Remove the front belt collar.



6) Remove the E-ring to remove the transport roller 19 assembly.

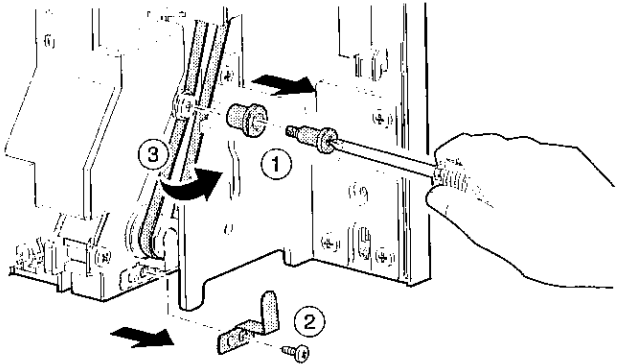


7) Remove the bearing, pulley, gear and pin from the transport roller 19.



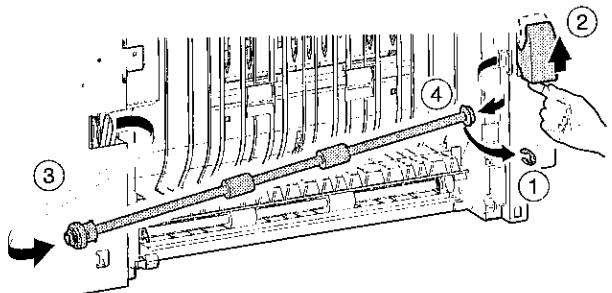
8) Remove the rear belt collar.

9) Remove the ground plate.

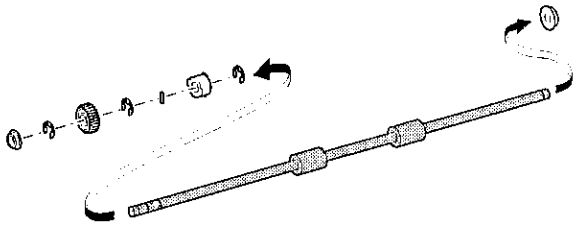


10) Remove the belt.

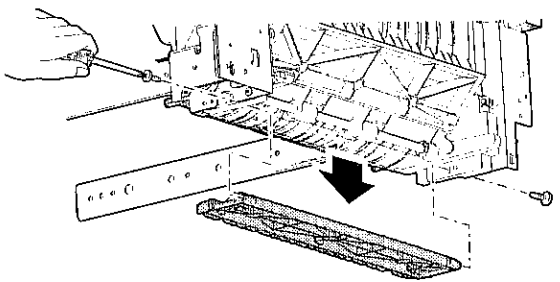
11) Remove the E-ring and lift up the switching lever to remove the transport roller 20 assembly.



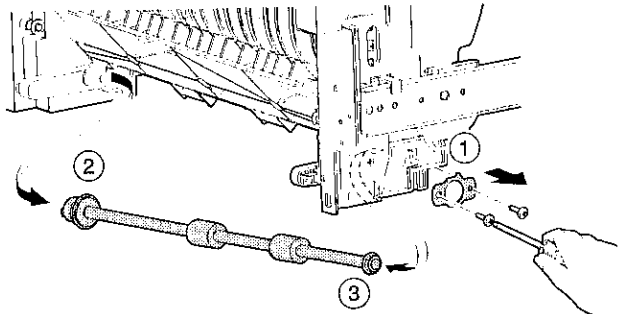
12) Remove the bearing, pulley, gear and pin from the transport roller 20.



13) Remove the U-turn paper guide.

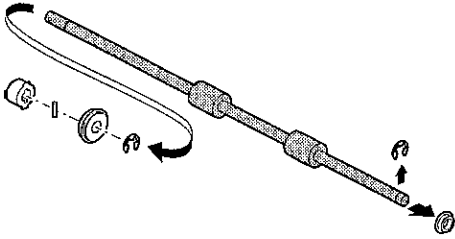


14) Apply the bearing attachment plate to remove transport roller 21.



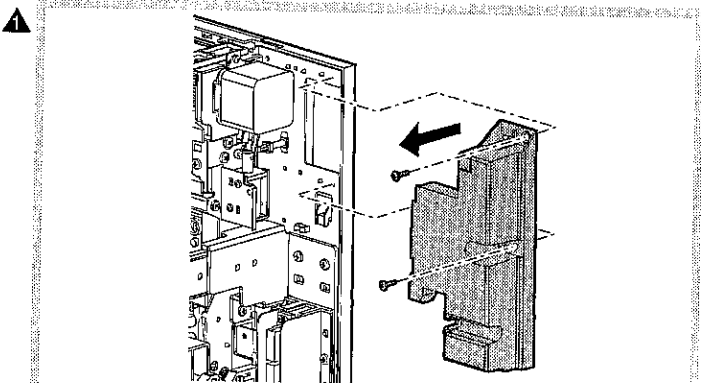
▲ : Feb. 6 2004

- 15) Remove the bearing, pulley, gear and pin from the transport roller 21.

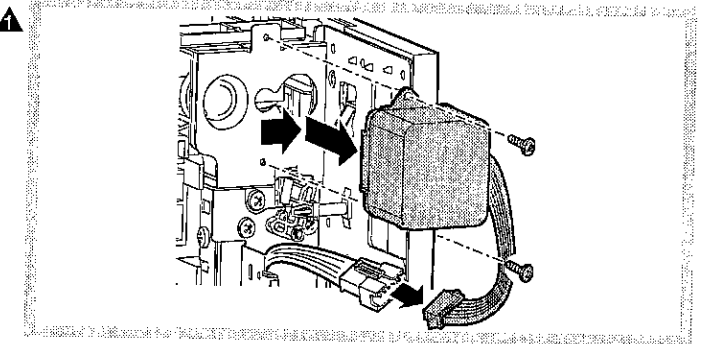


a-6. Duplex motor 1

- 1) Pull out the left door.
- 2) Remove the cover.

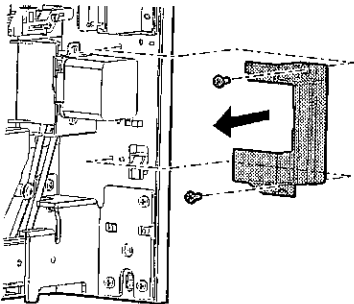


- 3) Remove the duplex motor 1.

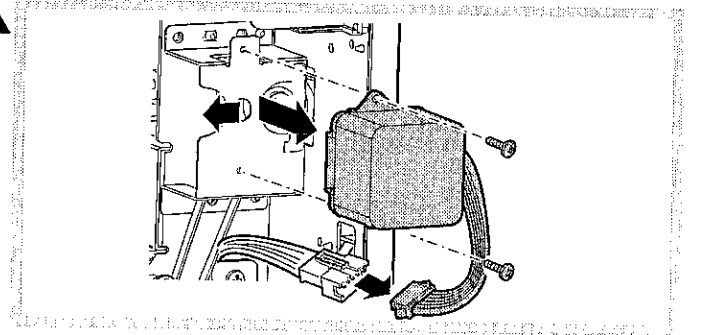


a-7. Duplex motor 2

- 1) Pull out the left door.
- 2) Remove the cover.

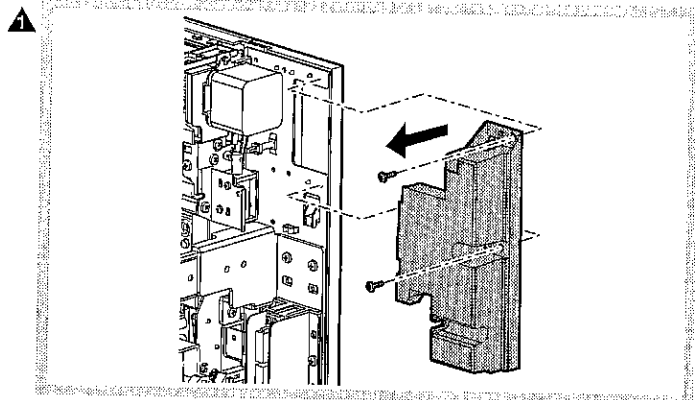


- 3) Remove the duplex motor 2.

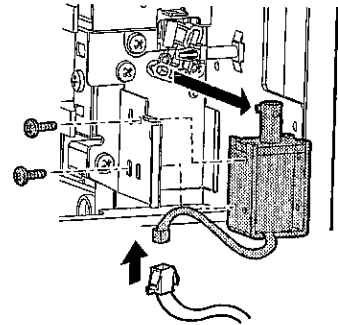


a-8. Paper exit gate solenoid

- 1) Pull out the left door.
- 2) Remove the cover.

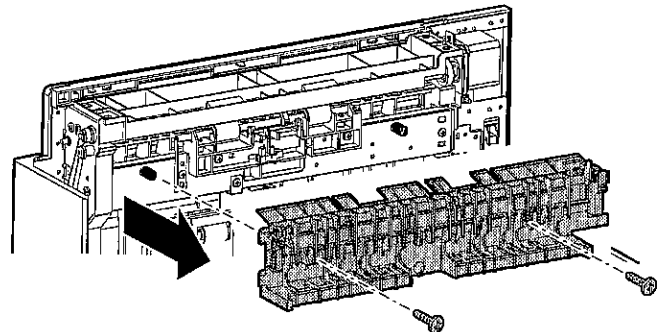


- 3) Remove the paper exit gate solenoid.

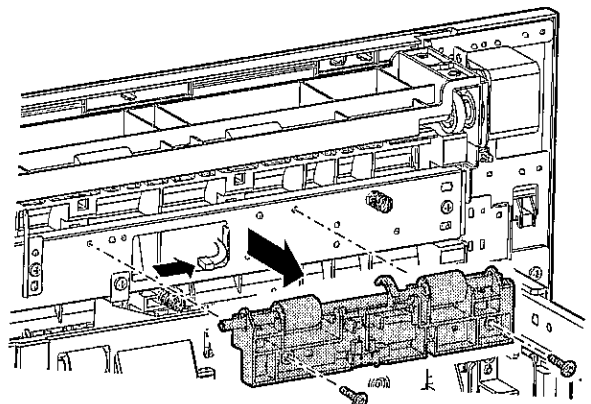


a-9. Duplex paper entry detector

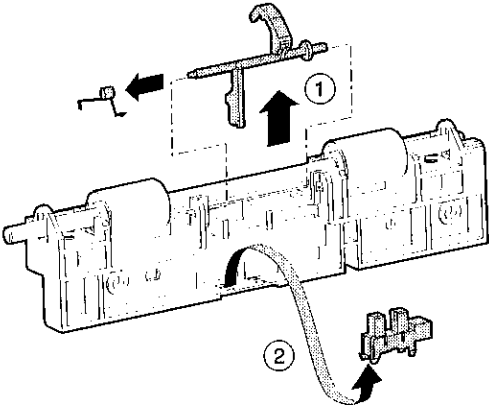
- 1) Pull out the left door.
- 2) Remove the paper guide unit.



- 3) Remove the follower roller unit.

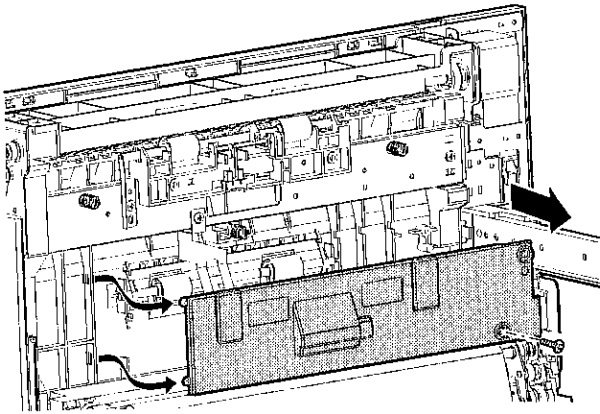


- 4) Remove the duplex paper entry detector.

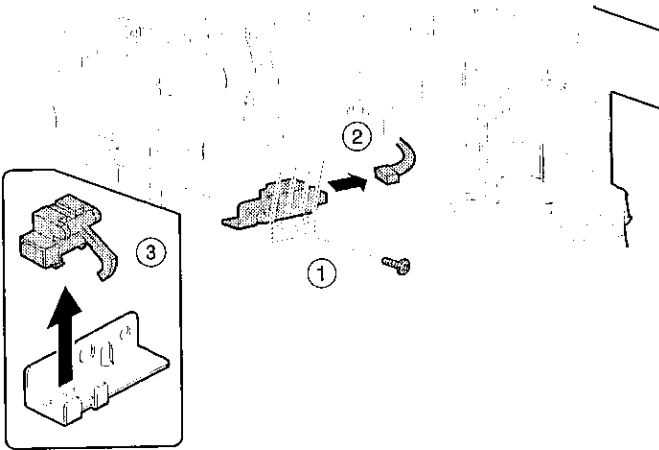


a-10. Duplex paper pass detector 1

- 1) Pull out the left door.
2) Remove the cover.

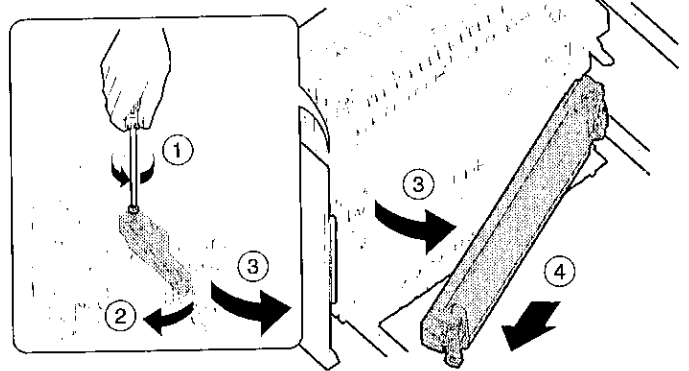


- 3) Remove the duplex paper pass detector 1.

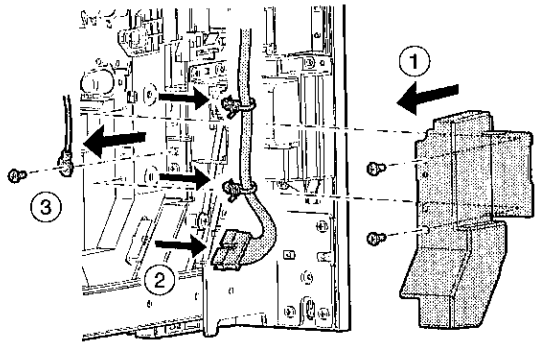


a-11. Left door transport paper guide R unit.

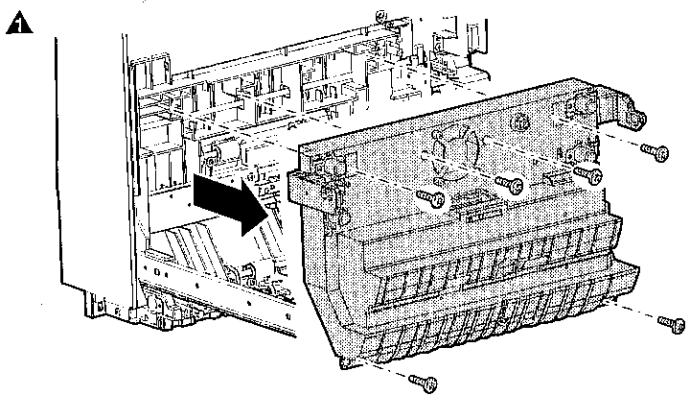
- 1) Pull out the left door.
2) Remove the transfer unit.



- 3) Remove the cover, and remove the connector, the snap band, and the earth terminal.

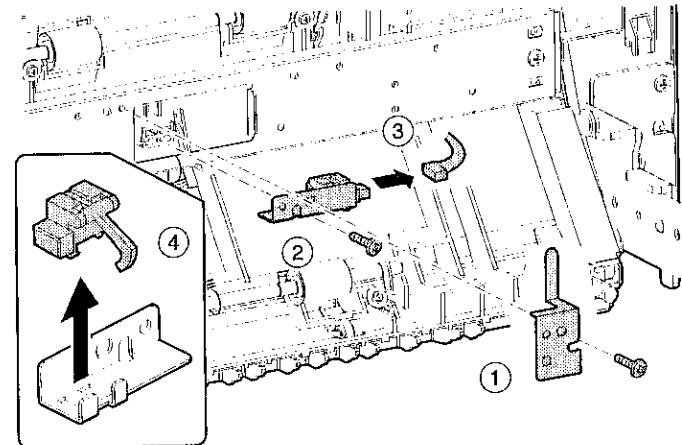


- 4) Remove the left door transport paper guide R unit.



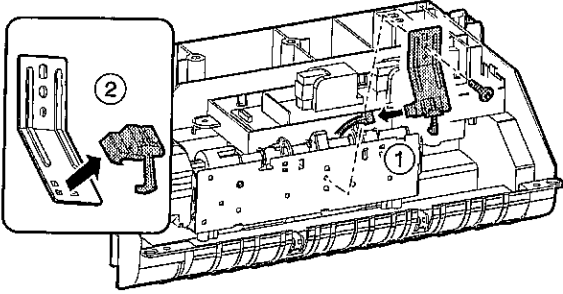
a-12. Duplex paper pass detector 2

- 1) Pull out the left door.
2) Remove the left door transport paper guide R unit.
3) Remove the duplex paper pass detector 2.

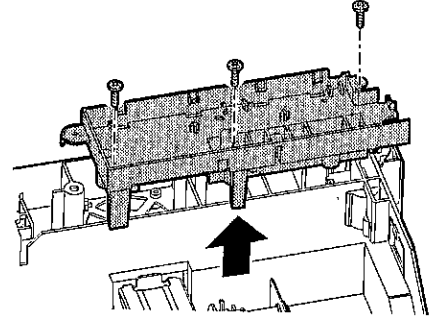


a-13. Paper pass detector 2

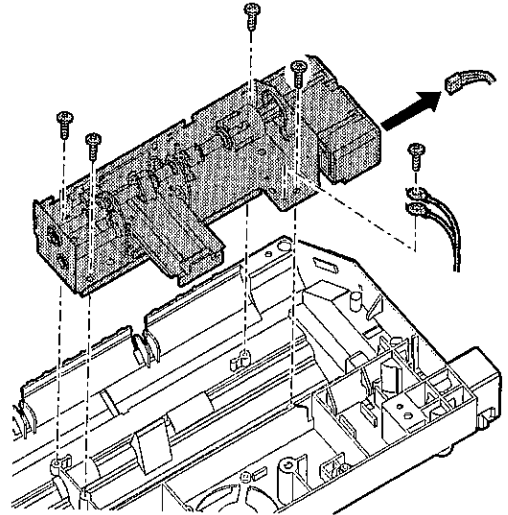
- 1) Pull out the left door.
- 2) Remove the left door transport paper guide R unit.
- 3) Remove the paper pass detector 2.



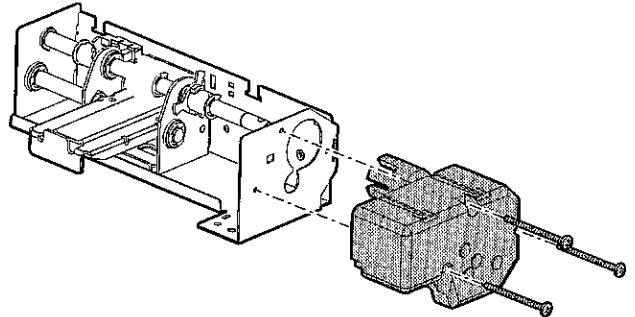
- 4) Remove the PWB holder.



- 5) Remove the transfer separation unit.

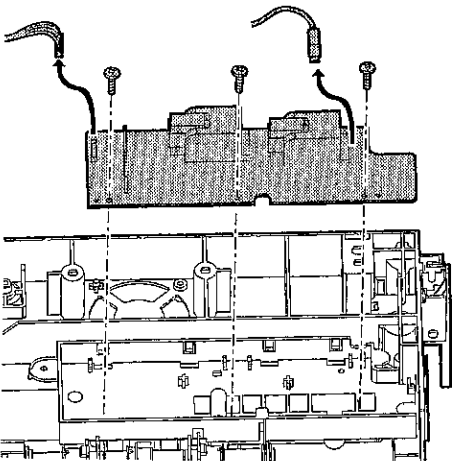


- 6) Remove the transfer separation motor.



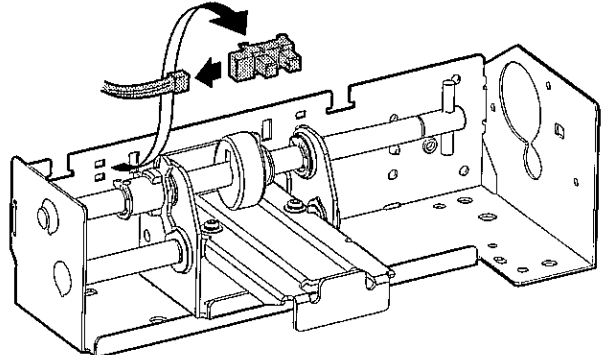
a-15. Transfer separation motor

- 1) Pull out the left door.
- 2) Remove the left door transport paper guide R unit.
- 3) Remove the transfer high voltage transformer.



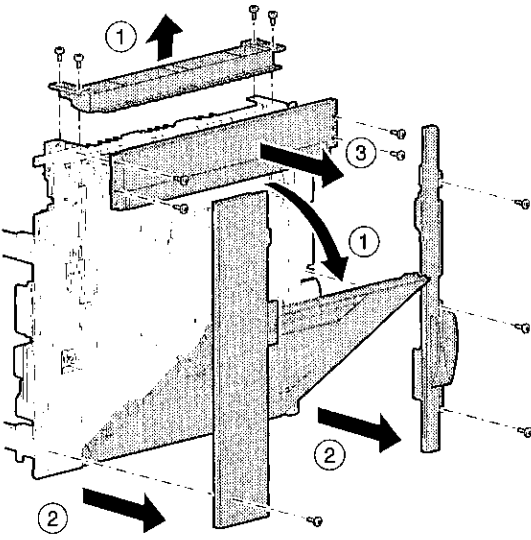
a-16. Transfer belt separation home position sensor

- 1) Pull out the left door.
- 2) Remove the left door transport paper guide R unit.
- 3) Remove the transfer belt separation home position sensor.

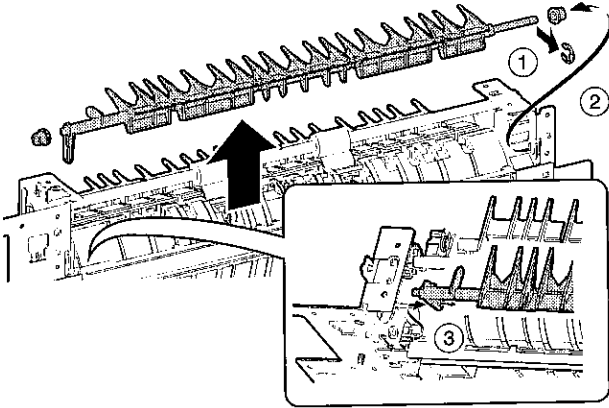


a-17. Paper exit gate

- 1) Pull out the left door.
- 2) Remove the paper guide. Open the door, and remove the cabinets.

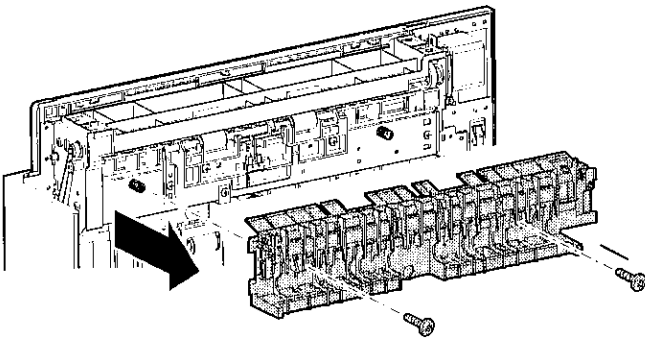


- 3) Remove the paper exit gate.

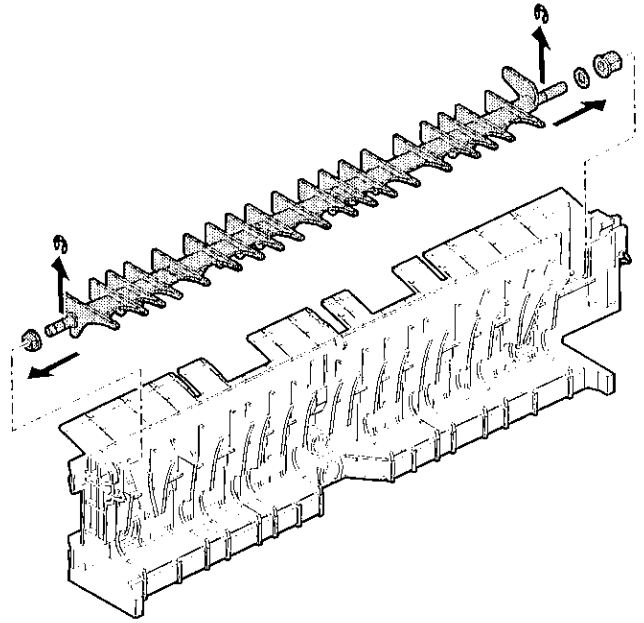


a-18. Switchback gate

- 1) Pull out the left door.
- 2) Remove the paper guide unit.

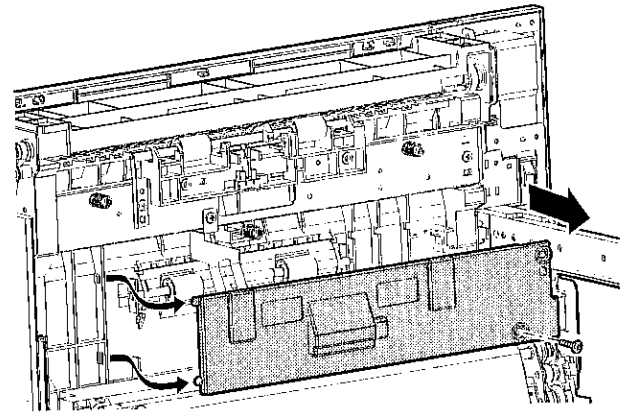


- 3) Remove the switchback gate.

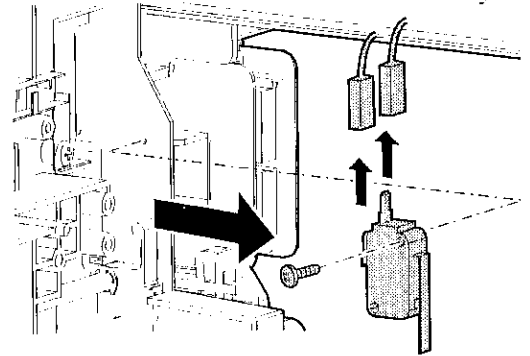


a-19. Left door open/close detector

- 1) Pull out the left door.
- 2) Remove the cover.

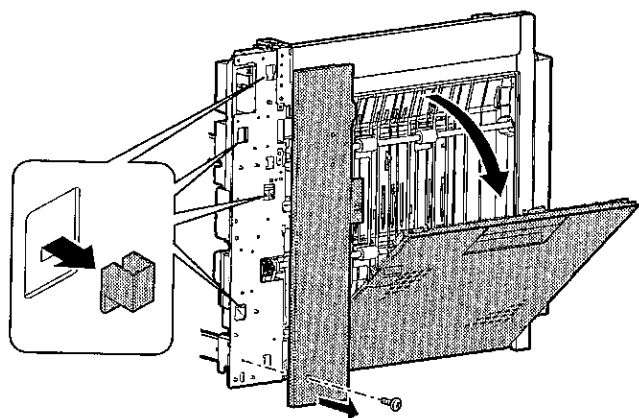


- 3) Remove the left door transport paper guide R unit.
- 4) Remove the left door open/close detector.

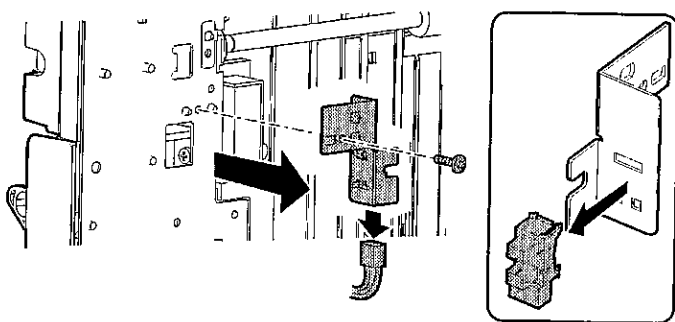


a-20. Duplex cover open/close detector

- 1) Pull out the left door.
- 2) Open the door, and remove the cover.

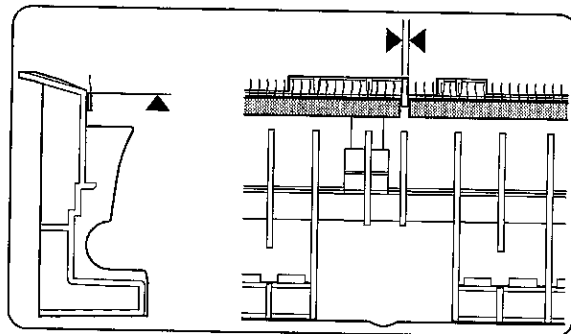
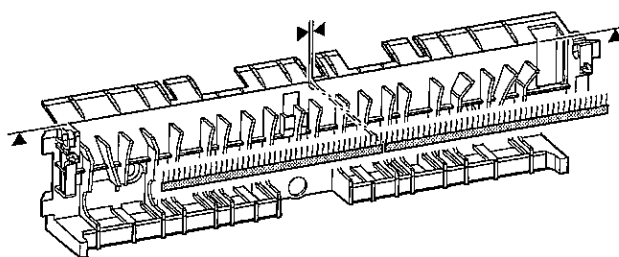


- 3) Remove the duplex cover open/close detector.



▲ a-22. Reversing discharge brush

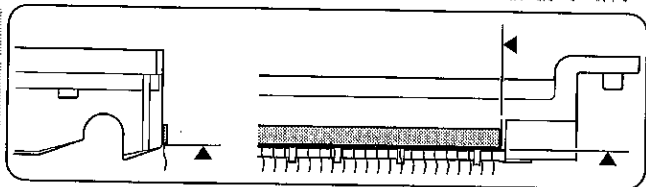
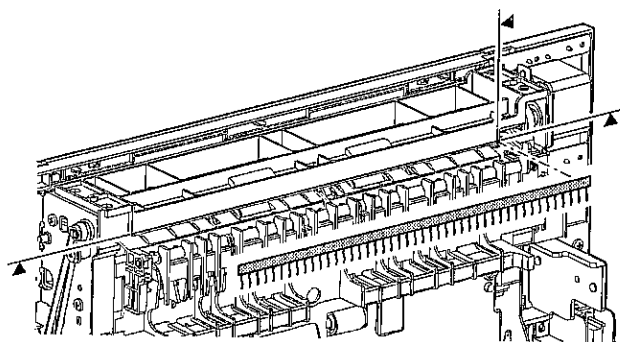
- 1) Pull out the left door.
- 2) Remove the switchback gate.
- 3) Remove the reversing discharge brush.



* Attach the reverse discharge brush so that it is fit with the rib inside and the parting line.

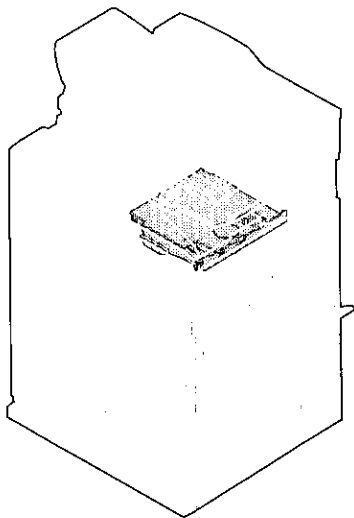
▲ a-21. Fusing discharge brush

- 1) Pull out the left door.
- 2) Remove the fusing discharge brush.



* Attach the fusing discharge brush so that it is fit with the rear end.

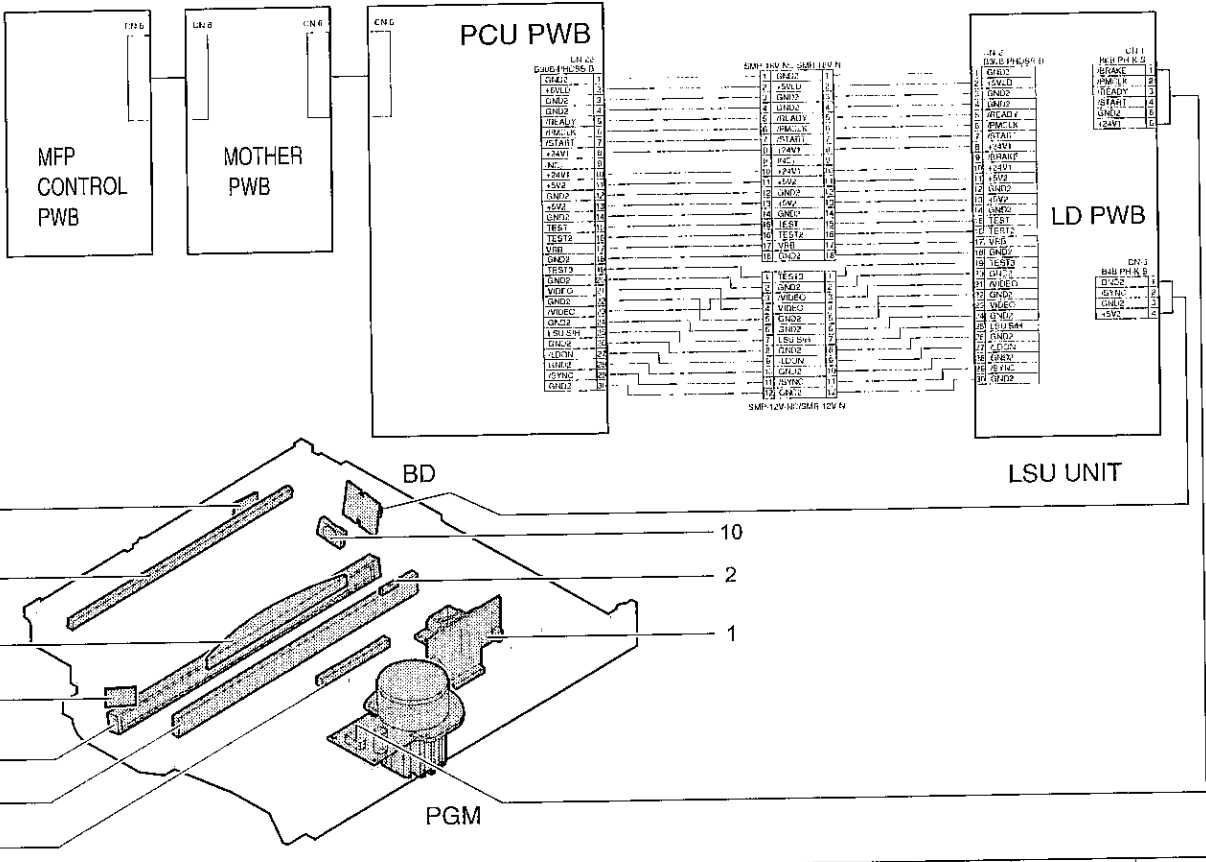
3. Laser scan unit (LSU)



A. General

This section performs the following operations.
Image data sent from the MFP (image process circuit) through the mother board and PCU are converted into laser beams to radiate onto the drum surface.

B. Major parts and signal functions



| Code | Signal name | Name | Type | Function/Operation | MODEL | NOTE |
|------|-------------|------------------------|------|---|-------|------|
| PGM | PGM | Polygon mirror (motor) | | Reflects laser beams at the constant rotation speed. | | |
| BD | | BD PWB | | Detects the laser scan start timing. This device is used to detect a laser trouble. | | |

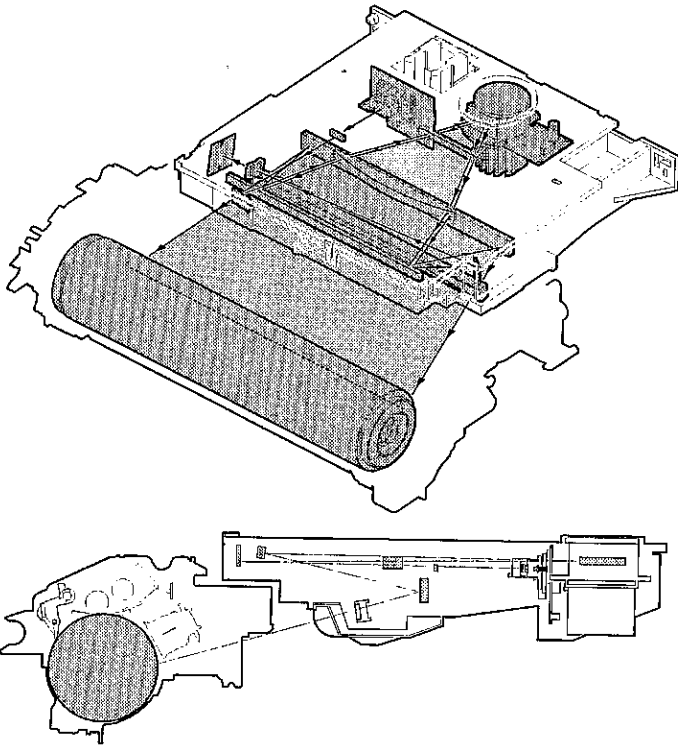
| No. | Name | Function |
|-----|-----------------------------|--|
| 1 | Laser control PWB | Controls laser beam flashing and the output value. |
| 2 | Cylindrical lens | Converges laser beams to focus. |
| 3 | Incidence reflection mirror | Assures the optical path for laser beams. |
| 4 | No. 1 mirror | Assures the optical path for laser beams. |
| 5 | fθ lens 1 | Deflects laser beams so that the laser scan speeds on the both ends of the drum and that at the center of the drum are the same. |
| 6 | fθ lens 2 | |

| No. | Name | Function |
|-----|-------------------------|--|
| 7 | BD PWB | Detects the timing of laser scan start. This device is used to detect a laser trouble. |
| 8 | No. 2 mirror | Converges laser beams to focus. |
| 9 | Plane lens | Assures the optical path for laser beams. |
| 10 | Convergence lens for BD | Converges laser beams onto the BD PWB. |

| No. | Name | Code, signal name | Function |
|-----|----------------|-------------------|--|
| RW | Control signal | +5VLD | 5V power for laser diode |
| RW | Control signal | /READY | Polygon mirror motor READY signal ("L" in the constant speed rotation) |
| RW | Control signal | /PMCLK | Clock signal for driving the polygon mirror motor |
| RW | Control signal | /START | Polygon mirror motor drive start signal |
| RW | Control signal | /VIDEO | VIDEO (Image signal) |
| RW | Control signal | /SYNC | Sync signal (SYNC) from BD, sync signal for 1 line |

C. Operational descriptions

[Laser optical path]



(2) Outline of LSU specifications

| | |
|-----------------------|--|
| Effective scan width: | 297mm |
| Resolution: | 600dpi |
| Beam diameter: | Main scan = 60 - 85 μm Sub scan = 75 - 110 μm |
| ▲ Laser power: | 0.385±0.04mW (AR-M550N/U, AR-M620N/U) 0.480±0.04mW (AR-M700N/U) |
| LD wave length: | 770 - 795nm |

* This unit must not be disassembled in the market.

(1) Polygon mirror motor

| Model | Number of mirror surfaces | Rotation speed | Bearing | Remark |
|----------------------------|---------------------------|----------------|---------|---------------------|
| ▲ AR-M550N/U AR-M620N/U | 14 surfaces | 34000rpm | AIR | Superior in silence |
| ▲ AR-M700N/U | 14 surfaces | 40000rpm | AIR | |

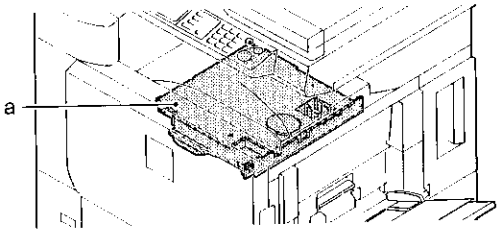
The number of mirror surfaces and the motor RPM are reduced to reduce noises and increase reliability.

D. Maintenance and parts replacement

(1) Maintenance and parts replacement

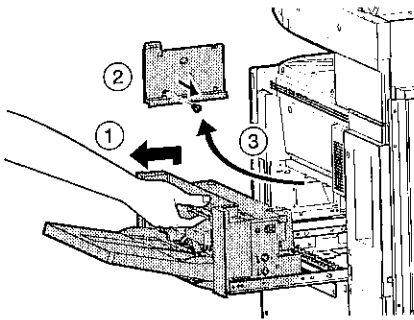
(List of Replacement Parts)

| No. | Unit | Parts |
|-----|------|-------|
| a | LSU | |

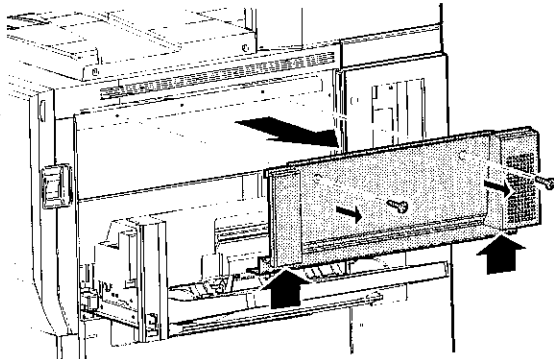


a. LSU

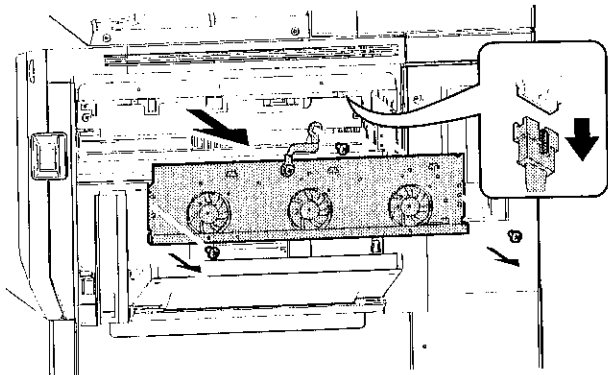
- 1) Pull out the multi paper feed tray, and remove the manual paper feed cover F.



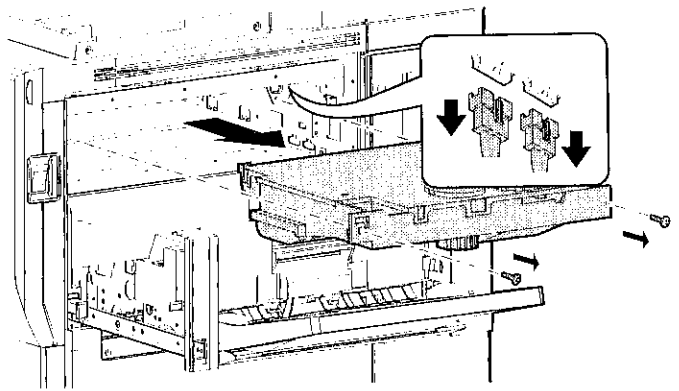
- 2) Pushing the lower part, remove the right cabinet center.



- 3) Disconnect the connector, and remove the process cooling fan unit.



- 4) Disconnect the connectors to remove the LSU unit.

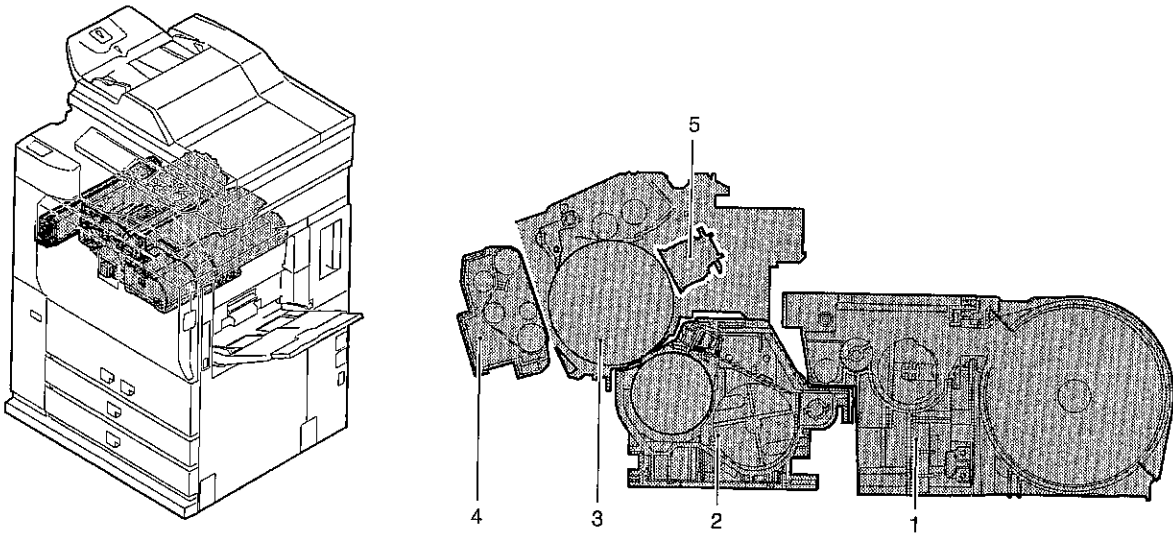


4. Image process section

A. General

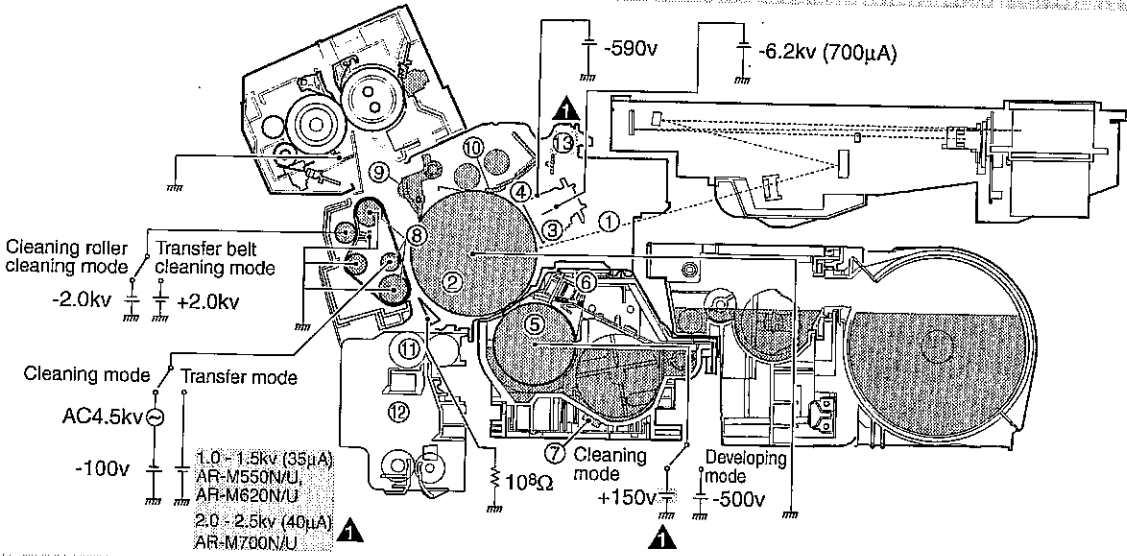
Toner is attached to electrostatic latent images formed by the laser beams which were radiated to the OPC drum charged by the main charger, forming toner images.

The toner images formed on the OPC drum are transferred to paper by the transfer belt.



| No. | Name | Operation |
|-----|--------------------------------------|--|
| 1 | Toner hopper unit, toner bottle unit | Provides toner to the developing unit, and collects waste toner in the front section of the toner bottle unit (waste toner box section). |
| 2 | Developer unit | Mixes toner and carrier, and attaches toner to electrostatic latent images to form visible images. |
| 3 | Process drum unit | Forms images (electrostatic latent images, visible images) on the OPC drum. |
| 4 | Transfer unit | Transfers toner images to the OPC drum. |
| 5 | Main charger unit | Charges the OPC drum surface negatively and evenly. |

Composition and Applied Voltage of the Process Section



| No. | Name | Functions |
|-----|----------------------------|--|
| 1 | Laser beams | Forms electrostatic latent images on the OPC drum. (Writing resolution: 600dpi) Radiated from the LSU. The output can be set with the simulation. (Basically not changed from the default.) |
| 2 | OPC drum | Electrostatic latent images are formed by laser beams. Toner is attracted to the latent electrostatic images and transferred to paper. An OPC drum is employed. The diameter is 80mm. |
| 3 | Main charger | Applies a high voltage to charge the OLPC drum. The saw teeth type is employed. |
| 4 | Screen grid | Carries electric charges from the main charger to the OPC drum evenly. |
| 5 | MG roller | Forms a magnetic brush with developer, and applies toner to the OPC drum. -500V |
| 6 | Developing doctor | Keeps the thickness of developer or toner layer on the MG roller at a fixed level. |
| 7 | Toner concentration sensor | Detects toner in the developing tank. The transmission type sensor is employed. |

| No. | Name | Functions |
|-----|----------------------|---|
| 8 | Transfer roller | Applies a voltage to transfer toner from the OPC drum to paper. |
| 9 | Drum separation pawl | Separates paper from the OPC drum mechanically. |
| 10 | Cleaning blade | Cleans and scrapes toner from the OPC drum. |
| 11 | Resist roller | Deflects paper to adjust the paper feed timing to the process section. |
| 12 | Paper dust cleaner | Remove paper dust from the resist roller to reduce paper dust entry to the process section. |
| 13 | Discharge lamp | Discharges residual potential on the OPC drum by the lamp light. |

[Toner hopper and toner bottle section]

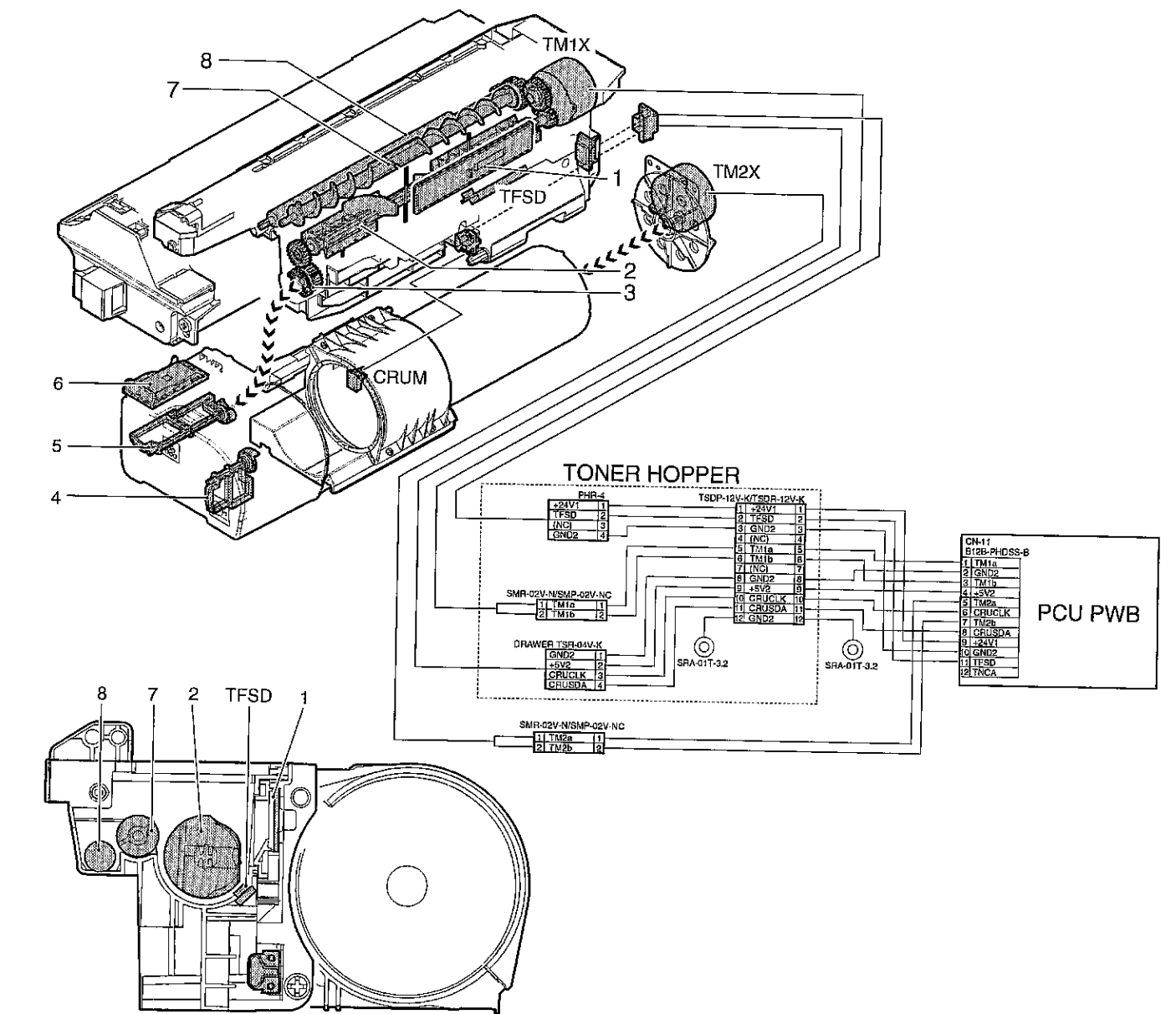
A. Outline

Adoption of the rotating toner bottle enables large capacity with a compact toner bottle size.

When the remaining toner detection sensor in the toner hopper unit detects no toner, the toner bottle turns to supply toner to the toner hopper. Following supply, since the sensor detects full or empty status inside the toner hopper based on a standard quantity of approximately 150 g of toner, even if the toner cartridge becomes empty, copying is not immediately suspended because toner inside the toner hopper is used (approximately 5K/6% print duty documents).

| Destination | Toner filling amount | Life with 6% print duty documents |
|--------------|----------------------|-----------------------------------|
| Except Japan | 1,430g/1,650g | 72,000 sheets/83,000 sheets |
| Japan | 1,275g | 50,000 sheets |

B. Major parts and signal functions

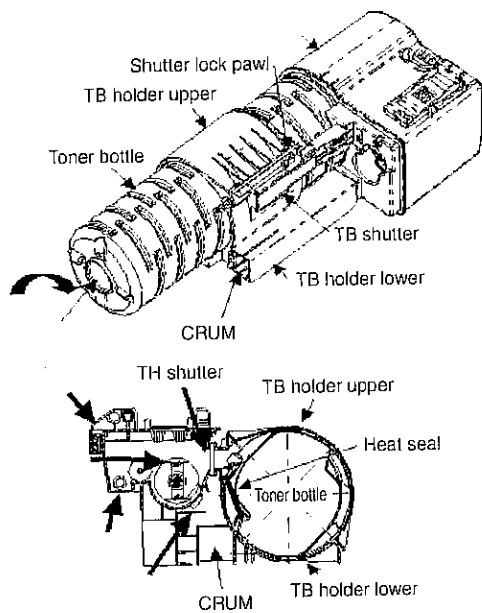


| Code | Signal name | Name | Function/Operation | Type | Model | Note |
|------|-------------|---|--|-------------------|-------|------|
| TM1X | TM1X | Toner motor 1 | Transports toner in the toner hopper to the developing unit. /Transports waste toner to the waste toner section. | Synchronous motor | | |
| TM2X | TM2X | Toner motor 2 | Transports toner in the toner bottle to the toner hopper. | Synchronous motor | | |
| TFSD | TFSD | Toner remaining quantity detection signal | Toner hopper remaining quantity detection | | | |
| CRUM | | CRUM lap | Stores the toner bottle information. | | | |

| No. | Name | Operation |
|-----|-----------------------------|---|
| 1 | TH shutter | Serves as a shutter to supply toner from the toner bottle unit to the toner hopper. When a toner bottle unit is installed, the shutter opens. |
| 2 | Toner mixing roller | Mixes toner in the toner hopper. |
| 3 | Waste toner box drive gear | Drives the waste toner transport parts. |
| 4 | Waste toner transport plate | Remains toner evenly in the waste toner box. |
| 5 | Waste toner transport plate | Remains toner evenly in the waste toner box. |
| 6 | Waste toner shutter | Serves as a shutter to receive waste toner from the process unit. |
| 7 | TH shaft | Toner supply roller to the toner unit section. |
| 8 | Toner supply roller | Toner supply roller to the developing unit section. |

C. Operational descriptions

(1) Composition

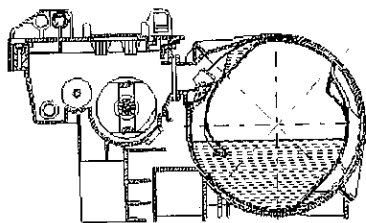


The toner cartridge is composed of the toner bottle with toner filled in it, the TB holder lower which holds the toner bottle and to which the CRUM and the waste toner box assembly are attached, and the TG holder upper.

The TB holder lower is attached to the TB shutter. When inserting it to the machine, the toner hopper rib releases the shutter lock pawl, and opens in linkage with the TH shutter. When removing the toner cartridge from the machine, the TB shutter closes.

NOTE: The toner discharge port of the toner bottle is sealed by the heat seal. Do not rotate the toner bottle manually, or the heat seal is dismantled and toner is discharged from the TB shutter port.

(2) Operation



The toner remaining quantity sensor in the toner hopper detects the toner remaining quantity by the toner stirring roller rotation. When there is little toner, the toner bottle rotating motor of the machine is rotated. The toner bottle rotates at 4.2rpm. Toner of about 54g is supplied to the toner hopper for every rotation. When toner full is not detected after detecting the state with little toner for a certain period (4min), the toner cartridge is judged as empty, and the display to urge toner cartridge replace is shown on the operation panel.

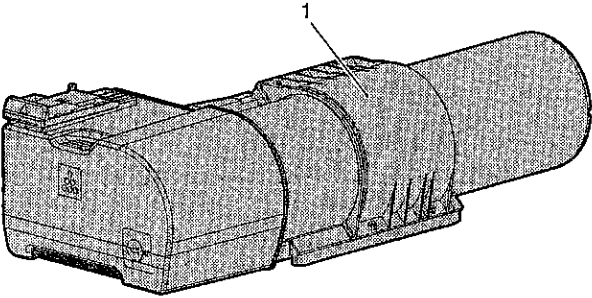
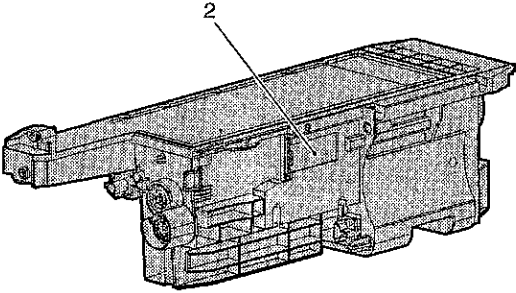
NOTE: When the power is turned on for toner hopper replacement or cleaning, the toner cartridge replacement display is shown though toner is not accumulated enough in the toner hopper. In such a case, turn off/on the power again.

D. Maintenance and parts replacement

(1) Maintenance list

X: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

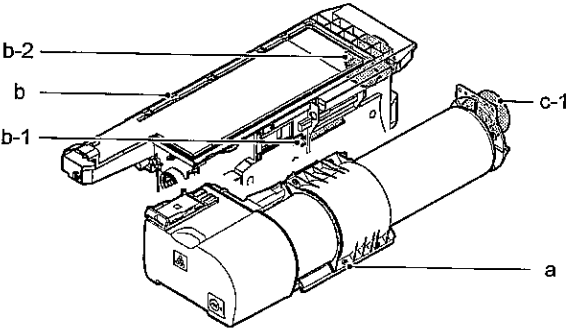
| Unit name | No. | Part name | When calling | AR-M550U/N (PM: 250K) AR-M620U/N, AR-M700U/N (PM: 300K) | | | | | | | | Remark |
|--------------------|-----|--------------|--------------|--|------|------|-------|-------|-------|-------|-------|---|
| | | | | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | |
| Developing section | 1 | Toner bottle | | | | | | | | | | Assembly when installing/ Replacement by user when empty |
| | 2 | Toner hopper | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Cleaning the shutter area |



(2) Maintenance and parts replacement

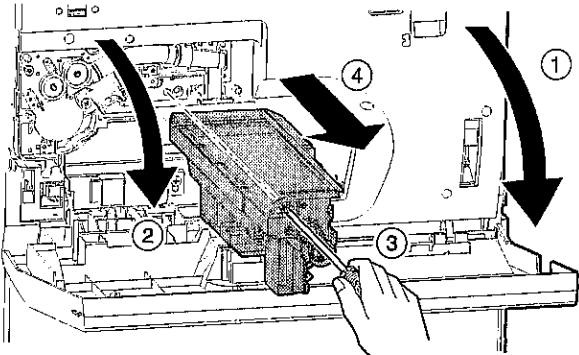
(List of Replacement Parts)

| No. | Unit | Parts |
|-----|-------------------|-----------------|
| a | Toner bottle unit | |
| b | Toner hopper unit | 1 Toner sensor |
| | | 2 Toner motor 1 |
| c | Other | 1 Toner motor 2 |

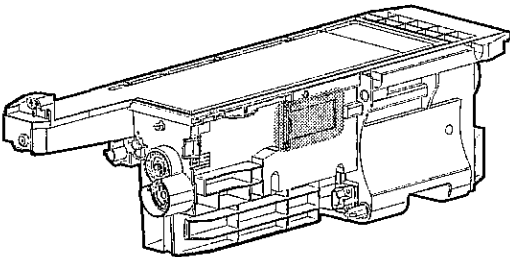


b. Toner hopper unit

- 1) Remove the toner bottle. (See "a. Toner bottle unit" in this section)
- 2) Open the process cover.
- 3) Remove the toner hopper unit.

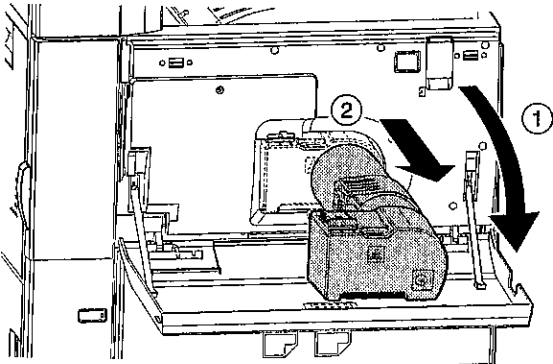


- 4) Clean the shutter area.



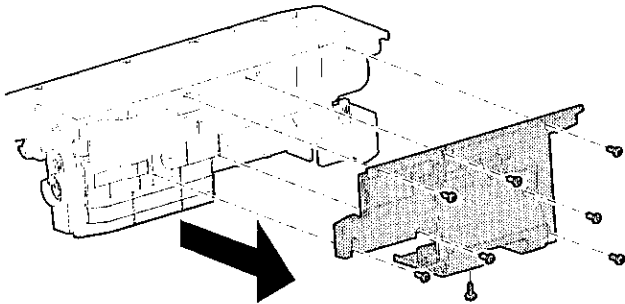
a. Toner bottle unit

- 1) Open the front door.
- 2) Remove the toner bottle.

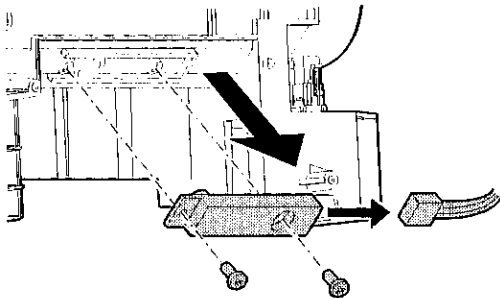


b-1. Toner sensor

- 1) Remove the toner hopper unit. (See "b. Toner hopper unit" in this section)
- 2) Remove the cover.

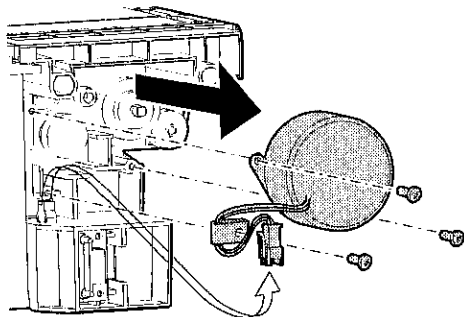


- 3) Remove the toner sensor.



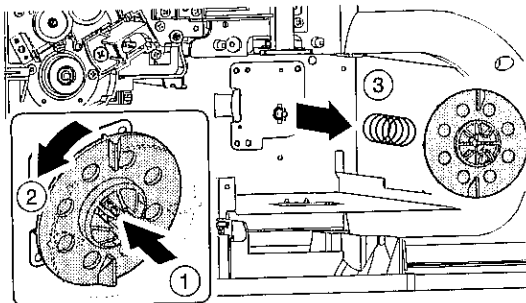
b-2. Toner motor 1

- 1) Remove the toner hopper unit. (See "b. Toner hopper unit" in this section)
- 2) Remove the toner motor 1.

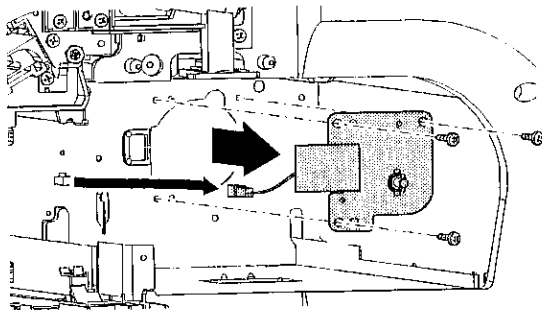


c-1. Toner motor 2

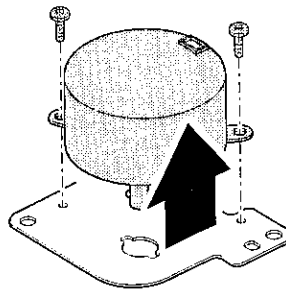
- 1) Remove the toner bottle. (See "b. Toner hopper unit" in this section)
- 2) Remove the toner hopper unit. (See "b. Toner hopper unit" in this section)
- 3) While pressing the bottle coupling, turn it 90 degrees to the left and remove it. Remove the spring.



- 4) Disconnect the connector, and remove the toner motor unit.



- 5) Remove the toner motor 2.

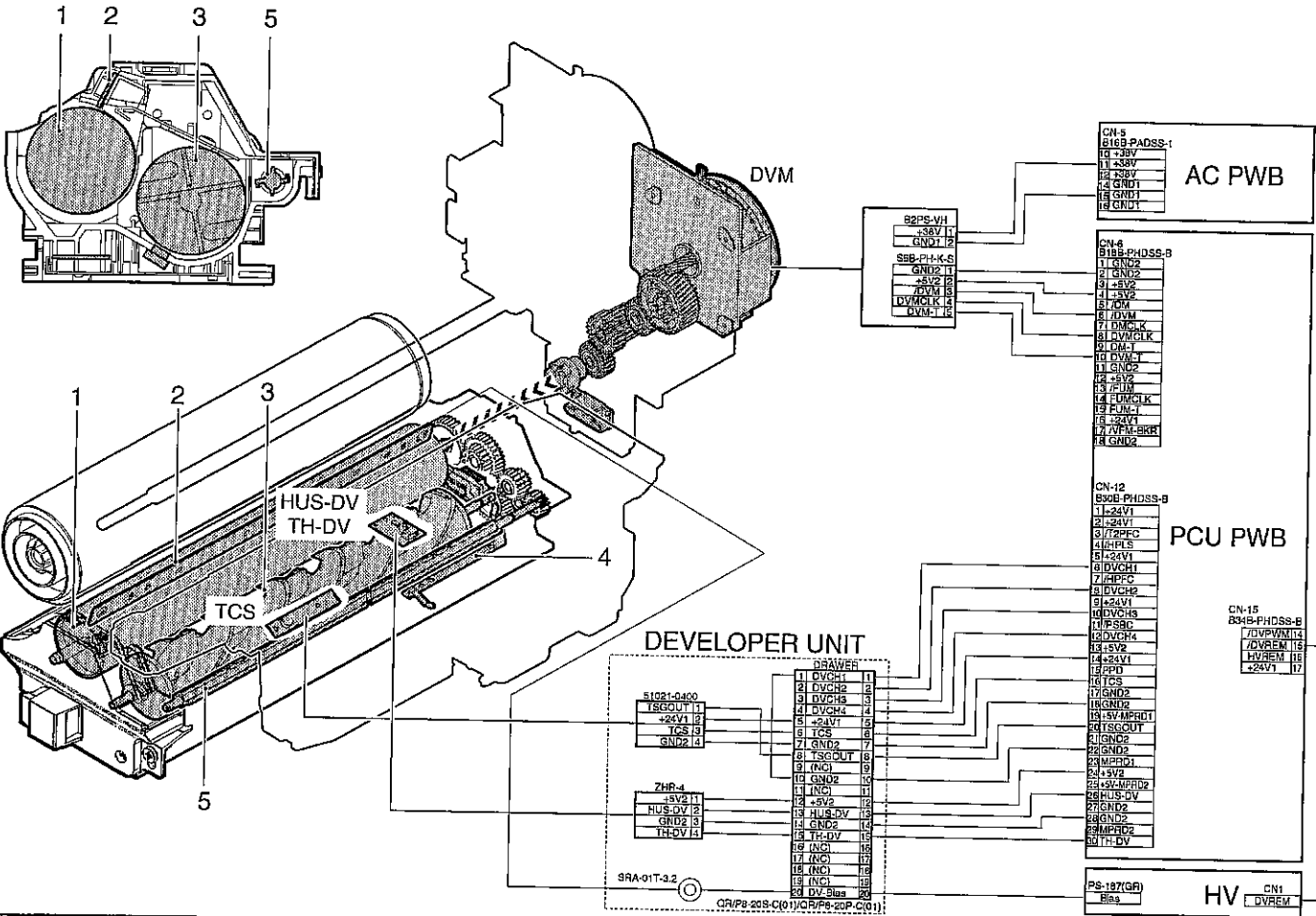


[Developer tank section]

A. General

In this section, toner is attached to electrostatic latent images formed by laser beams on the OPC drum, making visible images.

B. Major parts and signal functions

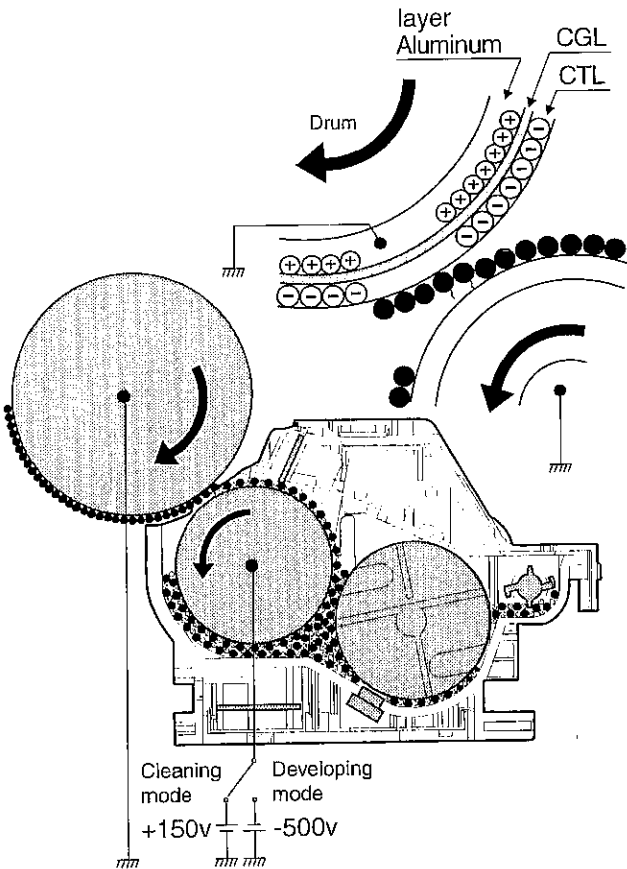


| Code | Signal name | Name | Function/Operation | Type | Model | Note |
|--------|-------------|----------------------------|--|--------------------|-------|-----------------|
| HUS-DV | HUS-DV | Developing humidity sensor | Developing section peripheral humidity detection | Humidity sensor | | Analog detector |
| TCS | TCS | Toner density sensor | Toner density detection | Magnetic sensor | | Analog detector |
| TH-DV | TH-DV | Developing humidity sensor | Developing section humidity detection | Thermistor | | Analog detector |
| DVM | DVM | Developing motor | Drives the developing section. | DC brushless motor | | |
| Bias | Bias | Developing bias | High voltage for developing bias | | | |

| No. | Name | Operation |
|-----|-------------------|--|
| 1 | Developing roller | Forms magnetic brush with developer and put toner on the OPC drum. |
| 2 | DV doctor | Keeps the height of the magnetic brush on the developing roller at a fixed level. |
| 3 | Mixing roller | Mixes developer (carrier and toner) and charges toner negatively. |
| 4 | DV earth plate | Earth plate for DV unit |
| 5 | AG roller | Mixes toner supplied from the toner hopper, and supplies toner to the DV box evenly. |

C. Operational descriptions

Electrostatic latent images formed on the OPC drum by the LED (writing) unit (LED image light) are converted into visible images by toner.



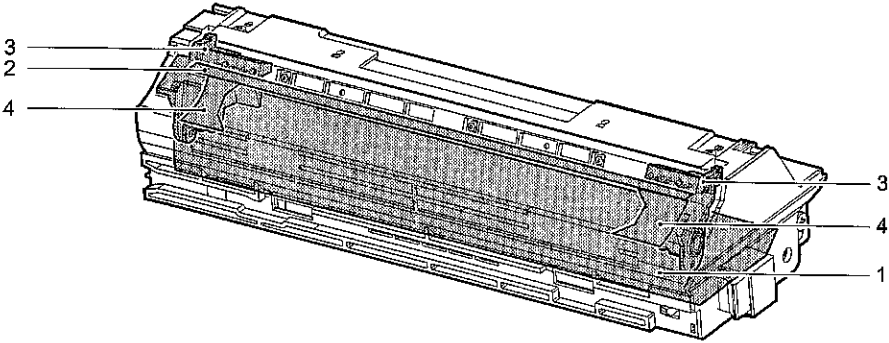
Toner in the developing unit is stirred by the mixing roller.
When toner is stirred, it is negatively charged by mechanical friction.
The developing bias voltage (negative) is applied to the developing roller.
Negatively charged toner is attracted and attached to the area on the OPC drum where negative voltage is reduced by exposure.
On the other hand, the negative voltage at an area where exposure is not made is higher than the developing bias voltage, and toner is not attached.

D. Maintenance and parts replacement

(1) Maintenance list

X: Check (Clean, replace, or adjust as necessary.) O: Clean ▲: Replace Δ: Adjust ☆: Lubricate □: Shift position

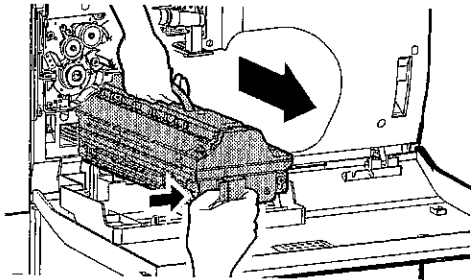
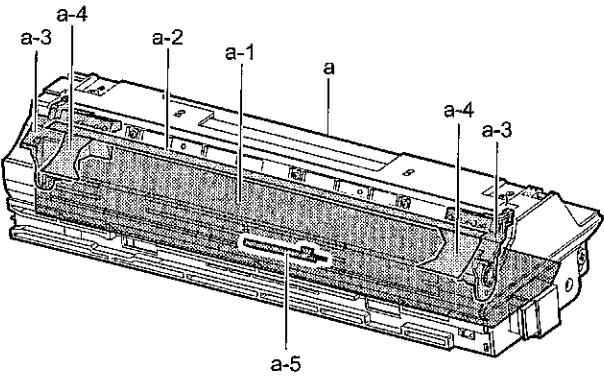
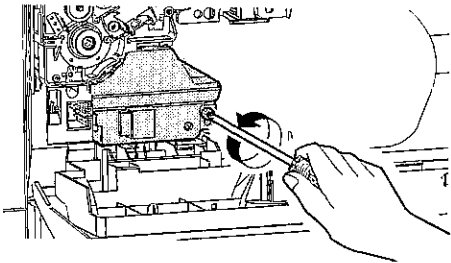
| Unit name | No. | Part name | When calling | AR-M550U/N (PM: 250K) AR-M620U/N, AR-M700U/N (PM: 300k) | | | | | | | | Remark |
|--------------------|-----|---------------|--------------|--|------|------|-------|-------|-------|-------|-------|------------------------|
| | | | | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | |
| Developing section | 1 | Developer | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | Supply when installing |
| | 2 | DV seal | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | MG holder F/R | O | O | O | O | O | O | O | O | O | |
| | 4 | Side seal F/R | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |



(2) Maintenance and parts replacement

(List of Replacement Parts)

| No. | Unit | Parts | |
|-----|-----------------|-------|----------------------------|
| a | Developing unit | 1 | Developer ▲ |
| | | 2 | DV seal ▲ |
| | | 3 | MG holders F and R O |
| | | 4 | Side seals F and R ▲ |
| | | 5 | Toner concentration sensor |

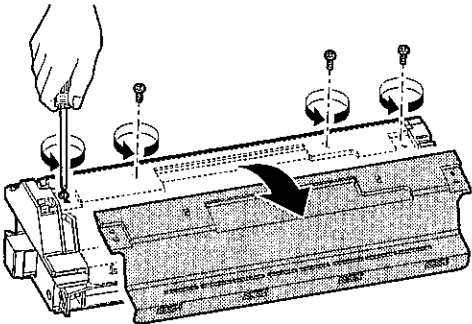
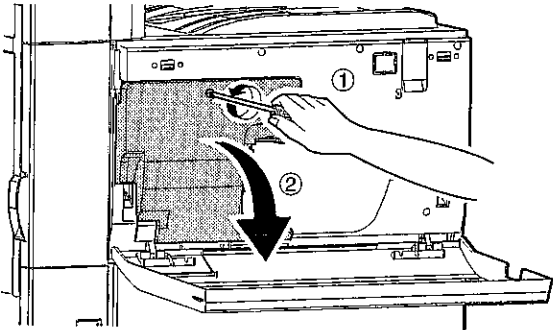


a-1. Developer

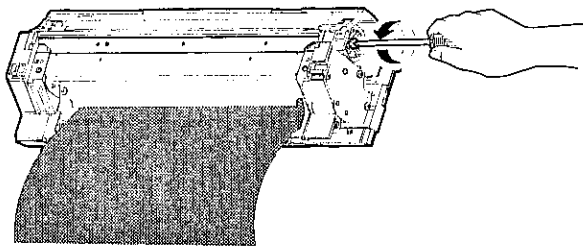
- 1) Take out the developing tank. (See "a. Developing unit" in this section)
- 2) Remove the DV cover.

a. Developing unit

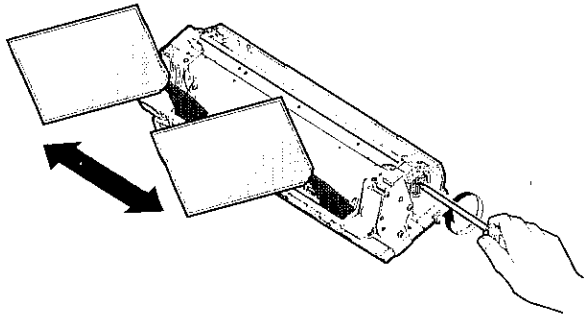
- 1) Take out the developing tank.



- 3) Turning the MG roller, take out the old developer.

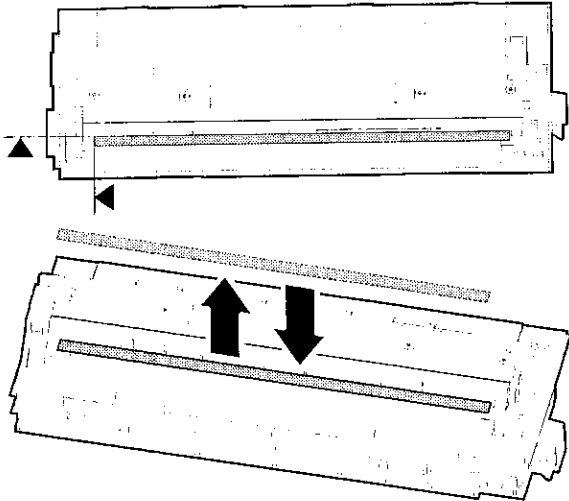


- 4) Insert the new developer.



a-2. DV seal

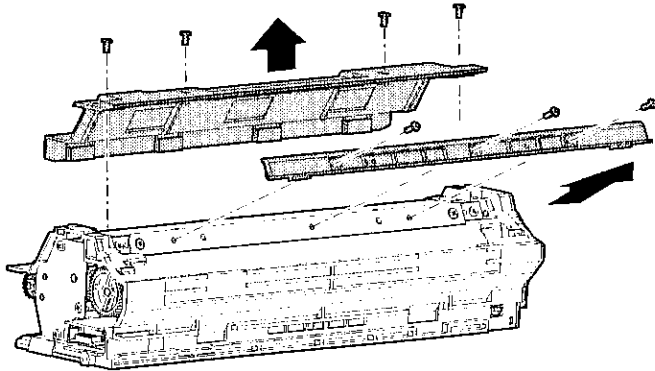
- 1) Take out the developing tank. (See "a. Developing unit" in this section)
- 2) Take out the old DV seal.



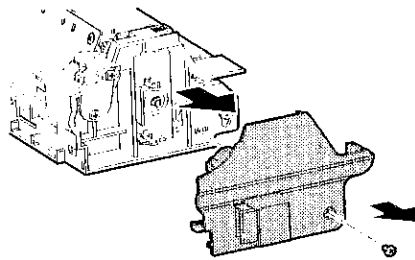
- 3) Wipe the sealing face with alcohol.
- 4) Affix the new DV seal at the reference position.

a-3. MG holders F and R

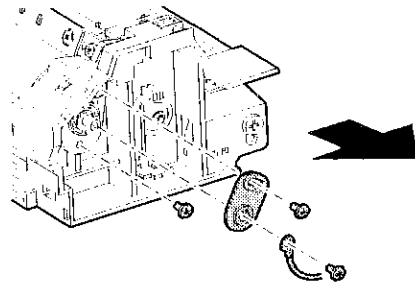
- 1) Take out the developing tank. (See "a. Developing unit" in this section)
- 2) Remove the DV cover. (See "a-1. Developer" in this section)
- 3) Remove the doctor cover.



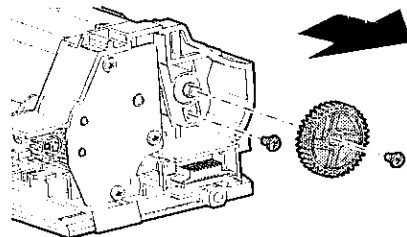
- 4) Remove the DV cover front.



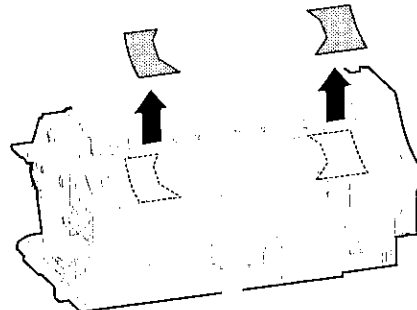
- 5) Remove the bias line and main pole position adjusting plate and screws.



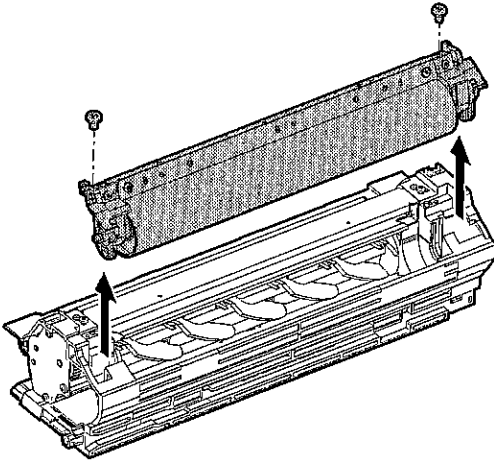
- 6) Remove the MG gear and screws.



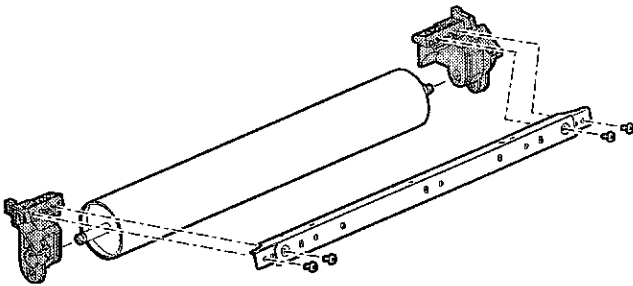
- 7) Remove the side seals F and R.



- 8) Remove the MG roller unit.



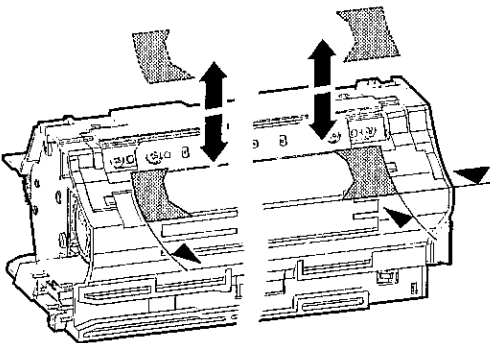
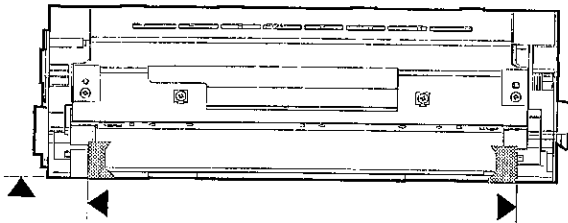
- 9) Remove the doctor attaching plate.



- 10) Remove the MG holders F and R.

a-4. Side Seals F and R

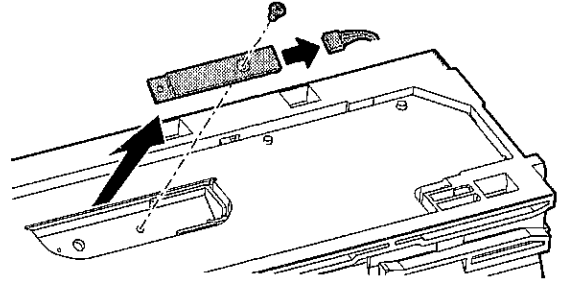
- 1) Take out the developing tank.
- 2) Remove the doctor cover.
- 3) Peel off the right and left side seals.



- 4) Clean the peeled area.
- 5) Peel off the new right and left seals from the mounting paper and affix in the designated positions.

a-5. Toner concentration sensor

- 1) Remove the developing tank. (See "a. Developing unit" in this section)
- 2) Remove the DV cover. (See "a-1. Developer" in this section)
- 3) Remove the toner concentration sensor.

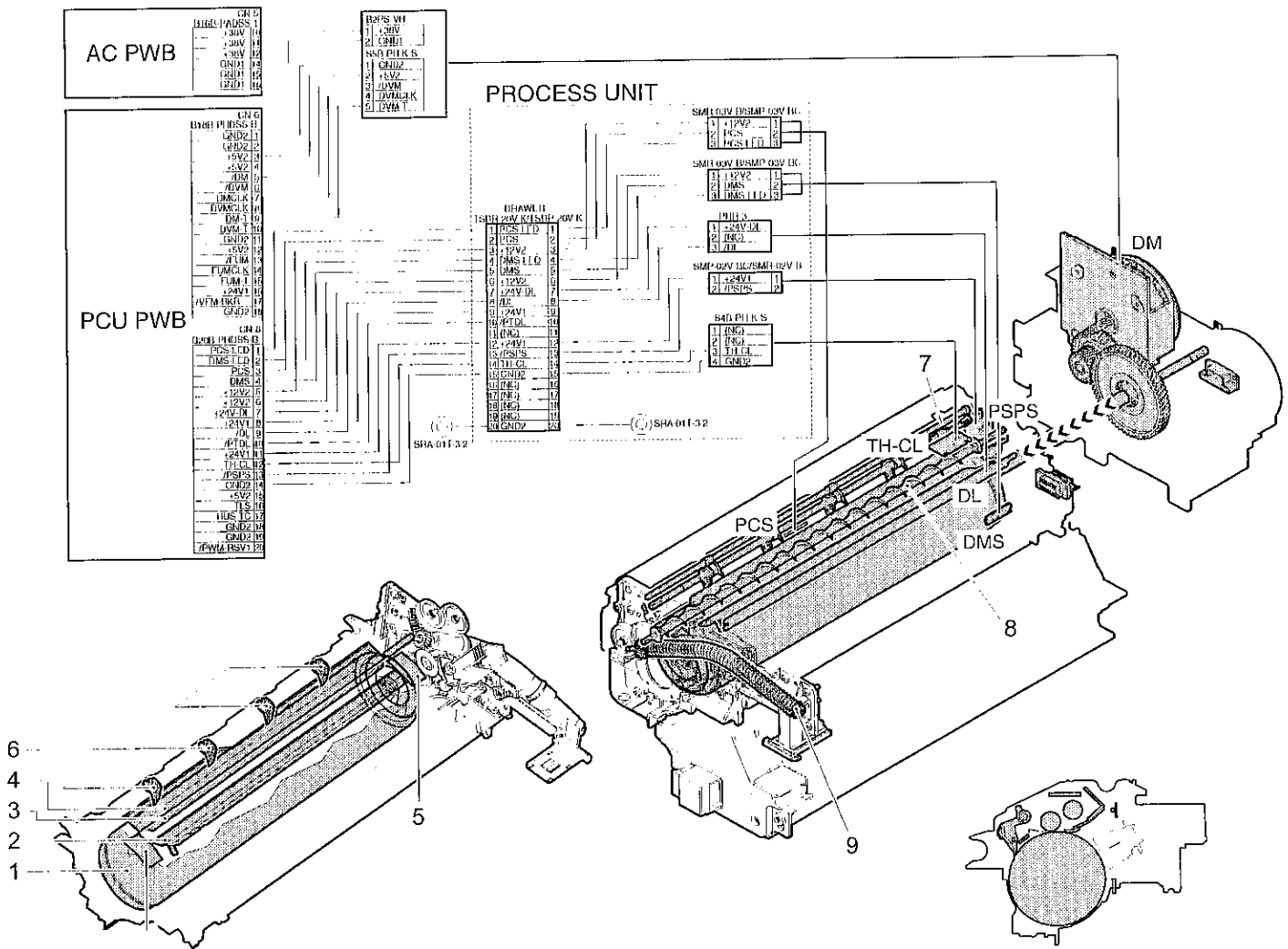


[OPC drum section]

A. General

In this section, laser beams are radiated to the OPC drum surface which was negatively charged, making electrostatic latent images.

B. Major parts and signal functions



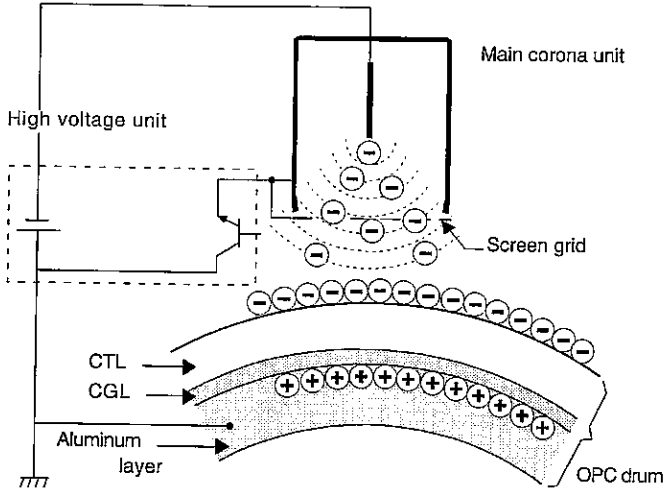
| Code | Signal name | Name | Function/Operation | Type | Model | Note |
|-------|-------------|-------------------------------------|---|--------------------|-------|-----------------|
| DMS | DMS | OPC drum marking sensor signal | OPC drum mark detection | Reflection type | | Analog detector |
| PCS | PCS | Image density sensor | Detection of density of toner patch on the OPC drum | Reflection type | | Analog detector |
| TH-CL | TH-CL | OPC drum cleaner temperature sensor | OPC drum cleaner peripheral temperature detection | Thermistor | | Analog detector |
| DM | DM | OPC drum motor | Drives the OPC drum and the transfer section. | DC brushless motor | | |
| PSPS | PSPS | Drum separation pawl solenoid | Drives the OPC drum separation pawl | Solenoid | | |
| DL | DL | Discharge lamp | Discharges electric charges on the OPC drum. | Lamp | | |

| No. | Name | Operation |
|-----|-----------------------------------|---|
| 1 | OPC drum | Forms electrostatic latent images by laser beams. |
| 2 | Cleaning blade | Cleans remaining toner on the OPC drum. |
| 3 | CL brush roller | Cleans remaining toner on the OPC drum. |
| 4 | Sub blade (Cleaning seal) | Prevent against toner leakage from the cleaner section. |
| 5 | Side seal F, R | Prevents against toner dispersion. |
| 6 | Drum separation pawl | Separates paper from the drum. |
| 7 | Separation pawl oscillation shaft | Moves in the front and rear frame direction to install the separation pawl. |
| 8 | Waste toner transport screw | Transports toner from the cleaner unit to the waste toner transport pipe. |
| 9 | Waste toner transport pipe | Transports toner from the cleaner unit to the waste toner box in the toner cartridge front section. |

C. Operational descriptions

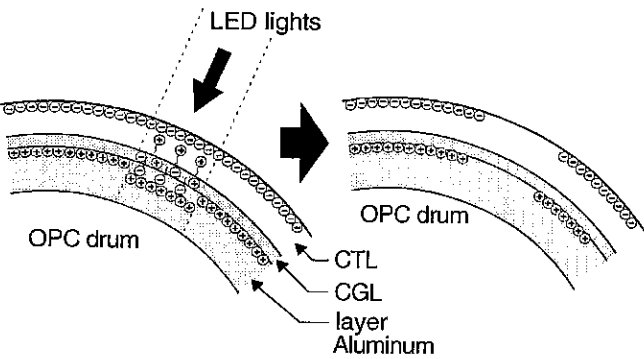
The OPC drum surface is negatively charged by the main charger. The laser beam images are radiated to the OPC drum surface by the laser unit to form latent electrostatic images.

- 1) The OPC drum surface is negatively charged by the main charger.



The main charger grid is provided with the screen grid. The OPC drum is charged at a voltage virtually same as the voltage applied to the screen grid.

- 2) LED lights are radiated to the OPC drum surface by the laser unit to form latent electrostatic images.



When LED lights are radiated to the OPC drum CGL, negative and positive charges are generated.

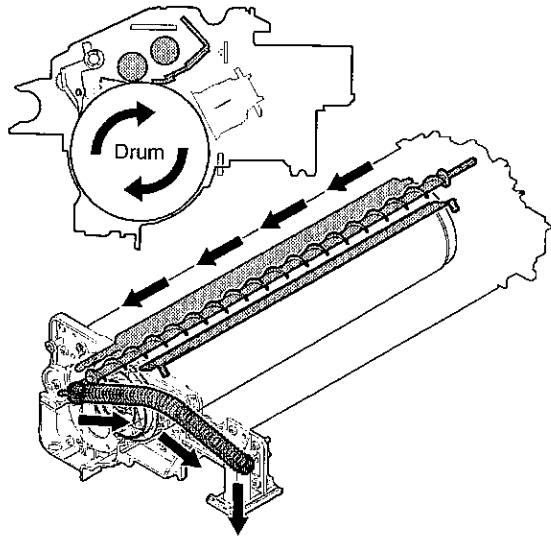
Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to the positive charges in the OPC drum aluminum layer.

Therefore, positive charges and negative charges are balanced out on the OPC drum and in the aluminum layer, reducing positive and negative charges to decrease the OPC drum surface voltage.

Electric charges remain at a position where LED lights are not radiated.

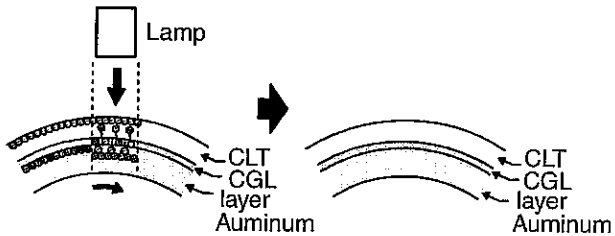
As a result, latent electrostatic images are formed on the OPC drum surface.

- 3) After transfer operation, remaining toner is removed by the cleaning blade.



Toner removed from the OPC drum surface is transported to the waste toner section in the toner cartridge by the waste toner transport screw.

- 4) The whole surface of the OPC drum is discharged.

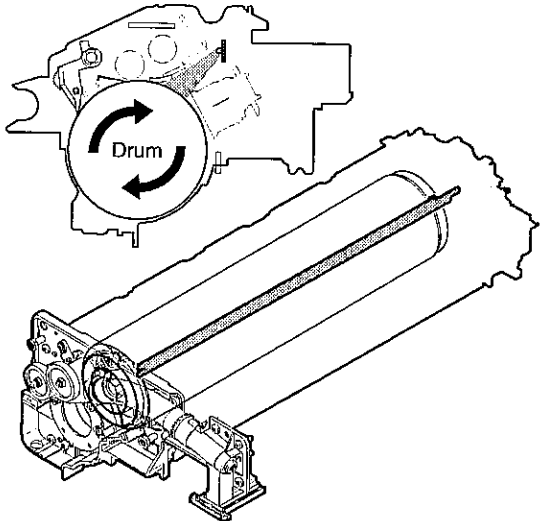


By radiating the discharge lamp light to the discharge lens, light is radiated through the lens to the OPC drum surface.

When the discharge lamp light is radiated to the OPC drum CGL, positive and negative charges are generated.

Positive charges generated in CGL are attracted to the negative charges on the OPC drum surface. On the other hand, negative charges are attracted to positive charges in the aluminum layer of the OPC drum.

Therefore, positive and negative charges are balanced out on the OPC drum surface and in the aluminum layer, reducing positive and negative charged to decrease the surface voltage of the OPC drum.

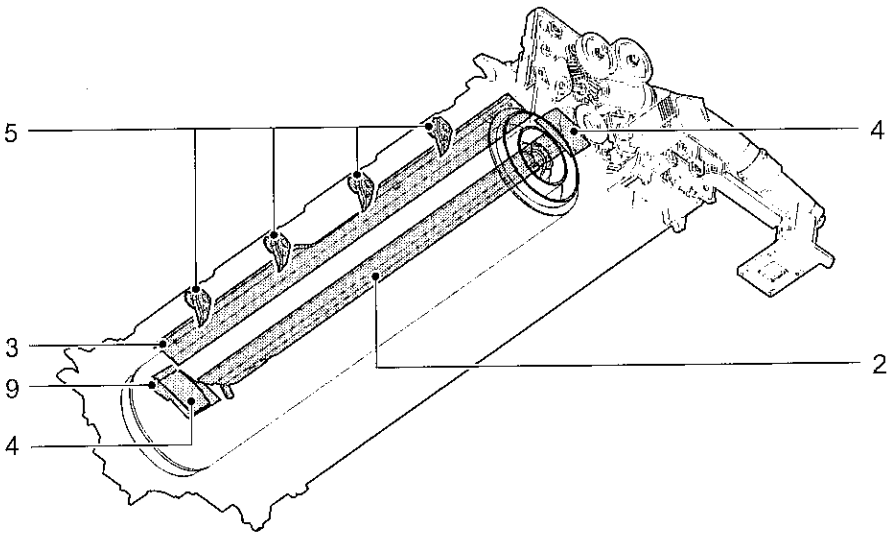
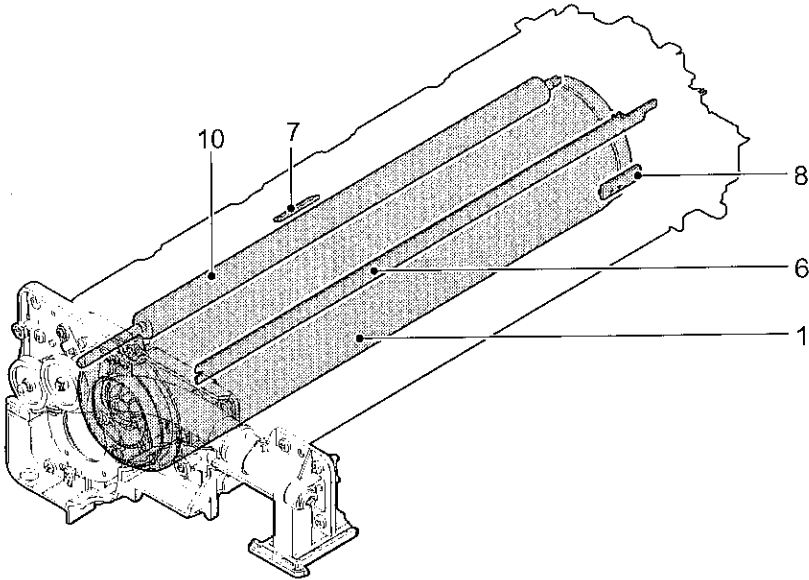


D. Maintenance and parts replacement

(1) Maintenance list

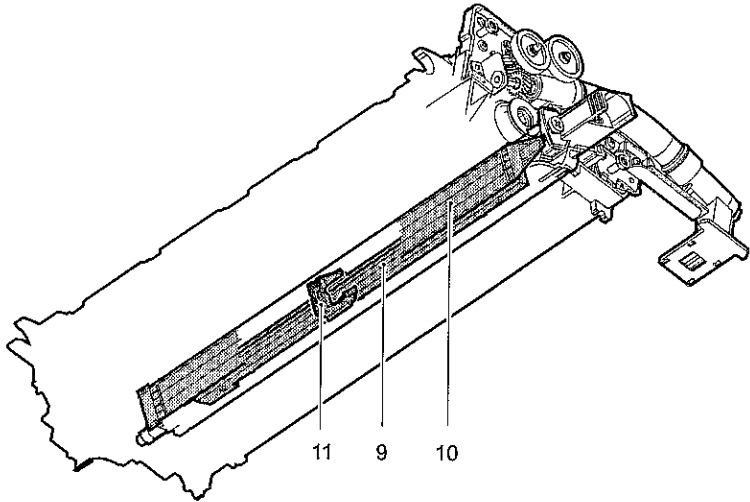
X: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ▲: Lubricate ▬: Shift position

| Unit name | No. | Part name | When calling | AR-M550U/N (PM: 250K) | | | | | | | | Remark |
|-------------------------|-----|-------------------------|--------------|-----------------------|------|------|-------|-------|-------|-------|-------|--------|
| | | | | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | |
| Drum peripheral section | 1 | Drum | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | | Cleaning blade | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | | Toner reception seal | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | | Side seal F/R | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | | Drum separation pawl | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | | Discharge lamp | X | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | Image density sensor | X | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | OPC drum marking sensor | X | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | Side seal R base sheet | | X | ▲ | X | ▲ | X | ▲ | X | ▲ | |
| | | Cleaning brush | X | X | X | X | X | X | X | X | X | |



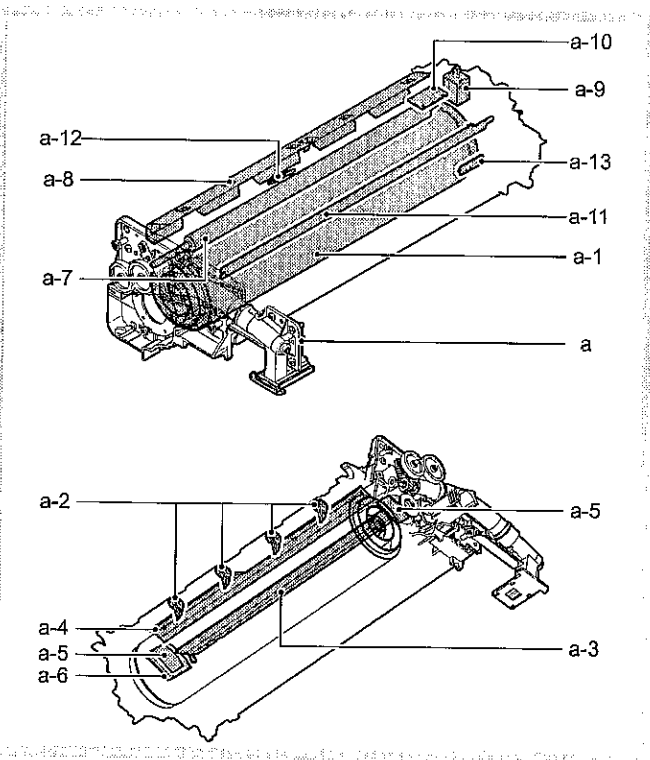


| Unit name | No. | Part name | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|-------------------------|-----|-------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------|
| | | | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Drum peripheral section | 9 | Sawtooth | ○ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 10 | Screen grid | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 11 | MC cleaner | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |



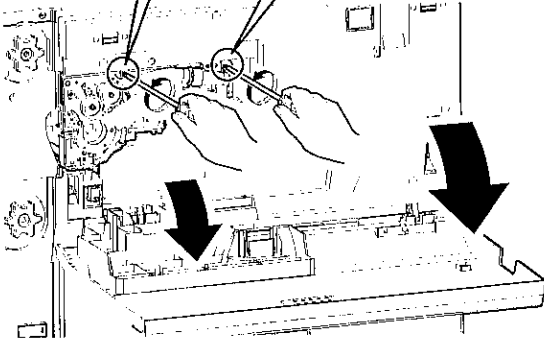
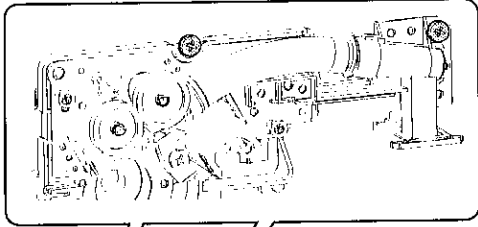
(2) Maintenance and parts replacement
(List of Replacement Parts)

| No. | Unit | Parts | | |
|-----|--------------|-------|-------------------------------------|----|
| a | Process unit | 1 | OPC drum | ×▲ |
| | | 2 | Separation pawl | ×▲ |
| | | 3 | Cleaning blade | ×▲ |
| | | 4 | Toner receiving seal | ×▲ |
| | | 5 | Side seal F/R | ▲ |
| | | 6 | Side seal R base sheet | ▲ |
| | | 7 | Cleaning brush | × |
| | | 8 | Process adsorption plate | ×○ |
| | | 9 | Drum separation pawl solenoid | |
| | | 10 | OPC drum cleaner temperature sensor | |
| | | 11 | Discharge lamp | ×○ |
| | | 12 | Image density sensor | ×○ |
| | | 13 | OPC drum marking sensor | ×○ |

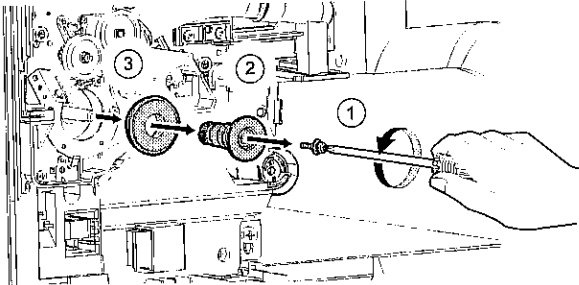


a. Process unit

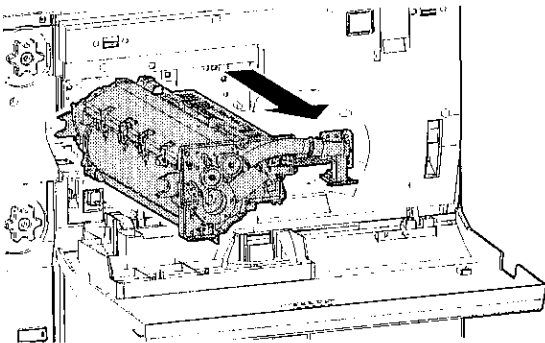
- 1) Open the front door.



- 2) Open the process cover.
- 3) Open the left door.
- 4) Remove the MC charger unit.
- 5) Remove the blue screw.
- 6) Unfix the drum to remove the bearing.

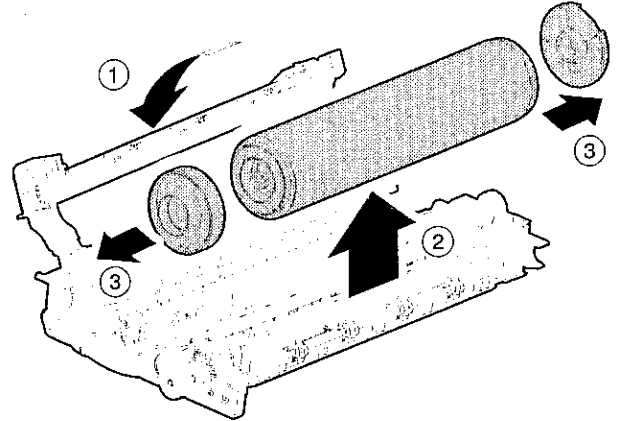
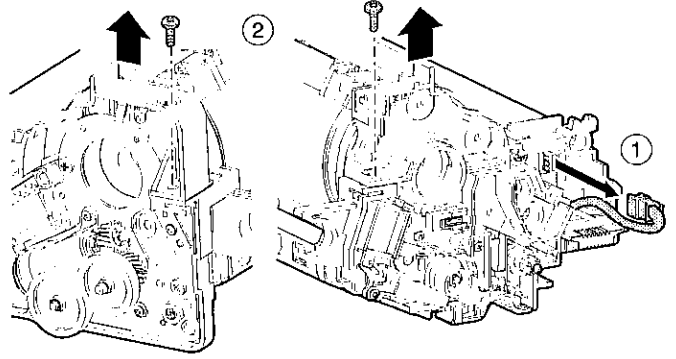


- 7) Pull out the process unit by clasping the bolt head.



a-1. OPC drum

- 1) Disconnect the connectors.

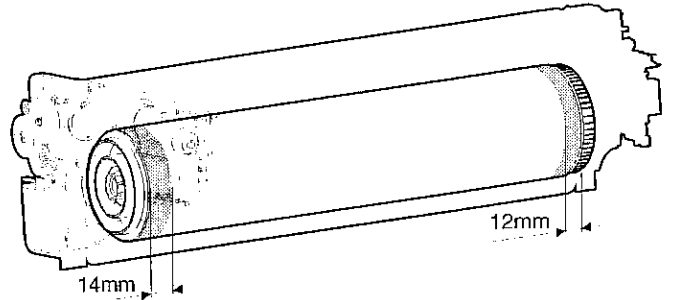


- 2) Remove the blue screw to open the lower frame.
- 3) Gently remove the drum, guide and all.
- 4) Remove the guide.

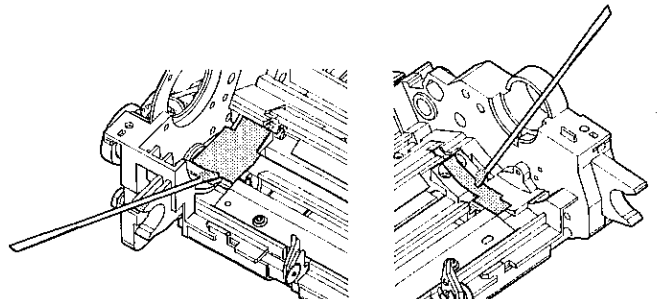
NOTE:

(OPC layer break-off on both sides of the OPC drum)

The OPC layer of a certain area of the OPC drum may break off due to rotational friction. The OPC layer break-off generated in the area shown below will not affect print images. Therefore, the drum can be used without replacement.

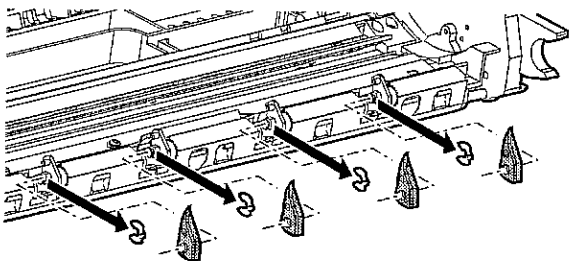


▲ **NOTE:** When replacing the OPC drum, apply friction-reducing powder (UKOG-0309FCZZ) to all over the drum (F and R) in order to reduce friction and membrane decrease of the OPC layer on both sides of the OPC drum. (Use PARTEL (UKOG-0311FCZZ).)



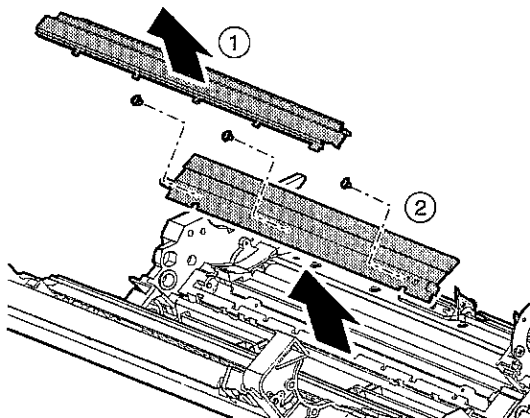
a-2. Separation pawl

- 1) Remove the OPC drum. (See "a-1. OPC drum" in this section)
- 2) Remove the plastic E-ring.
- 3) Remove the separation pawl.



a-3. Cleaning blade

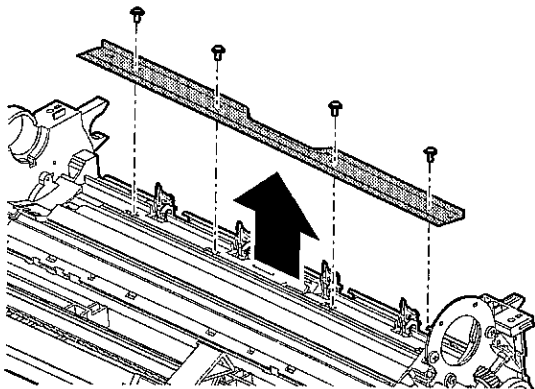
- 1) Remove the OPC drum. (See "a-1. OPC drum" in this section)
- 2) Remove the cover.



- 3) Remove the cleaning blade.

a-4. Toner receiving seal

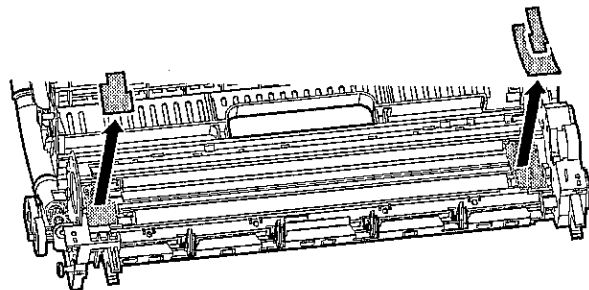
- 1) Remove the OPC drum. (See "a-1. OPC drum" in this section)
- 2) Remove the toner receiving seal.



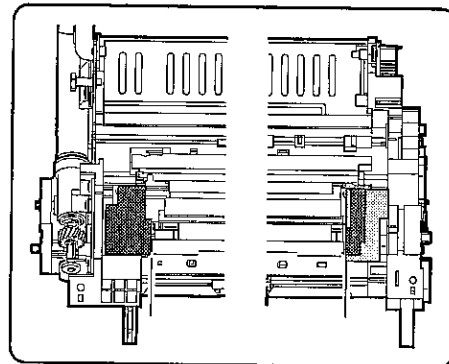
▲ a-5. Side seal F/R

a-6. Side seal R base sheet

- 1) Remove the OPC drum unit. (See "a-1. OPC drum" in this section)
- 2) Remove the side seal R base sheet.

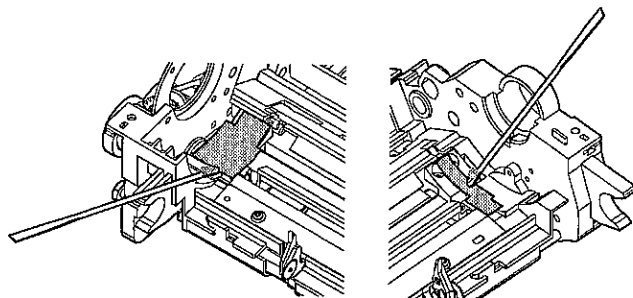


- 3) Attach the side seal R base sheet to the specified position. Attach the side seals F/R to the specified positions.



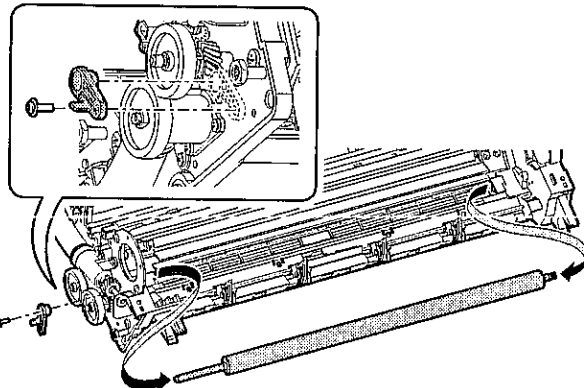
NOTE: Clean and remove toner and dust from the attachment section with alcohol.

NOTE: When replacing the side seals F/R, apply friction-reducing powder (UKOG-0309FCZZ) to all over the side seals F/R in order to reduce friction and membrane decrease of the OPC layer on both sides of the OPC drum. (Use PARTEL (UKOG-0311FCZZ).)



a-6. Brush roller

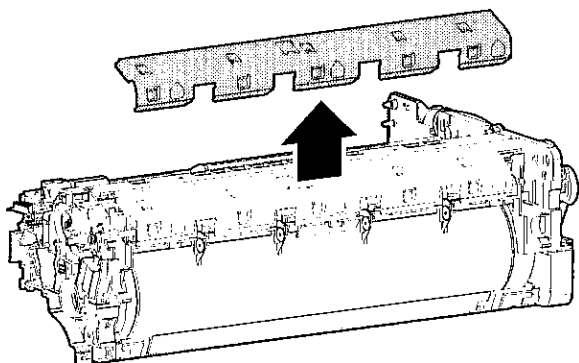
- 1) Remove the OPC drum. (See "a-1. OPC drum" in this section)
- 2) Remove the toner receiving seal.
- 3) Remove the blue screw to remove the lever.



4) Remove the brush roller.

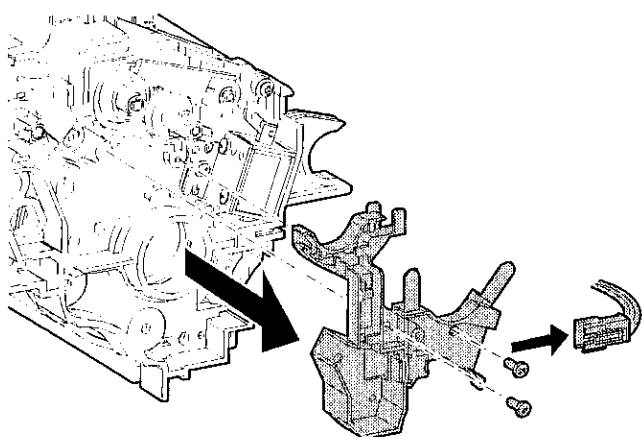
a-7. Process adsorption plate

- 1) Remove the drum unit.
- 2) Remove the cover to remove the adsorption plate.

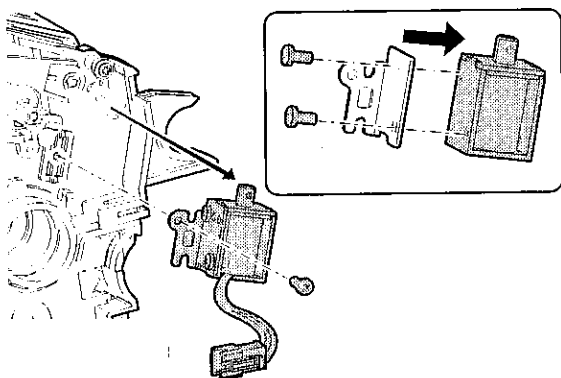


a-8. Drum separation pawl solenoid

- 1) Disconnect the connector, and remove the harness guide unit.

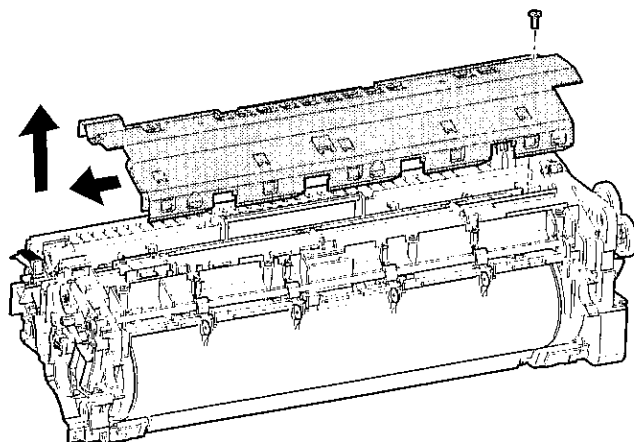


- 2) Remove the drum separation pawl solenoid.

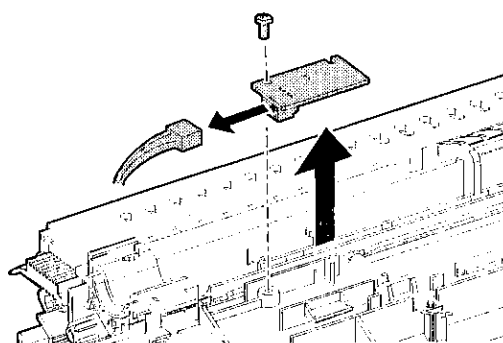


a-9. OPC drum cleaner temperature sensor

- 1) Remove the upper cover.

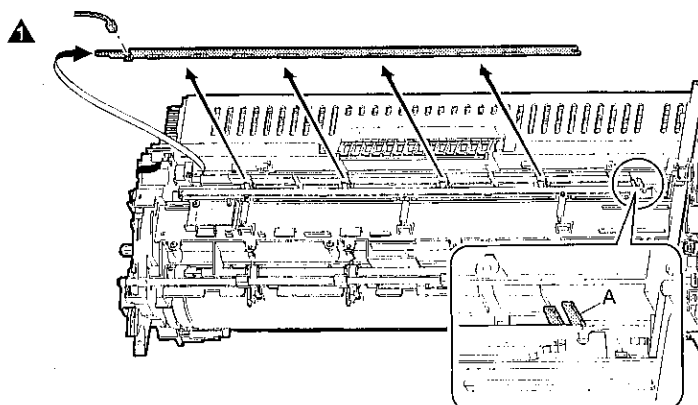


- 2) Remove the OPC drum cleaner temperature sensor.



a-10. Discharge lamp

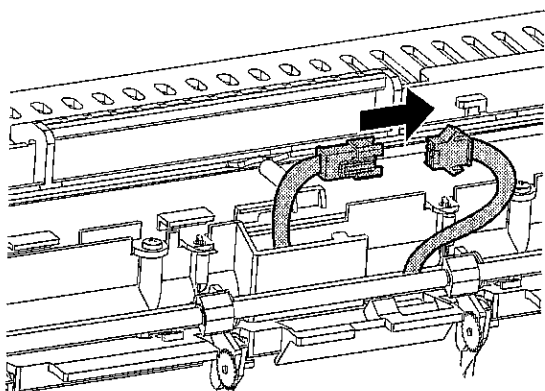
- 1) Remove the upper cover. (See "a-9. OPC drum cleaner temperature sensor" in this section)
- 2) Remove the discharge lamp.



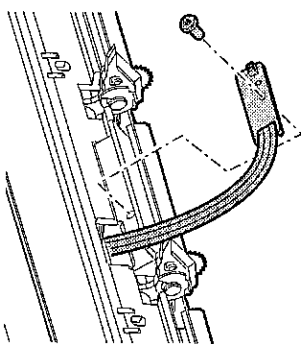
* Be careful not to break the pawl when fixing.

a-11. Image density sensor

- 1) Remove the upper cover. (See "a-9. OPC drum cleaner temperature sensor" in this section)
- 2) Disconnect the connector.



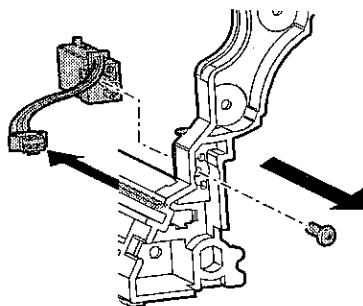
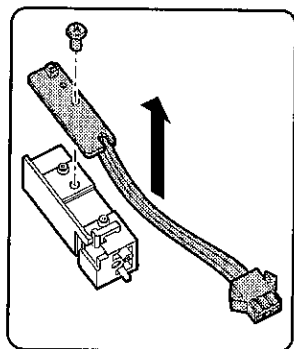
- 3) Remove the OPC drum unit. (See "a-1. OPC drum" in this section)
- 4) Remove the image density sensor.



a-12. OPC drum marking sensor

- 1) Remove the OPC drum unit. (See "a-1. OPC drum" in this section)
- 2) Remove the OPC drum marking sensor.

▲ NOTE: Execute cleaning.

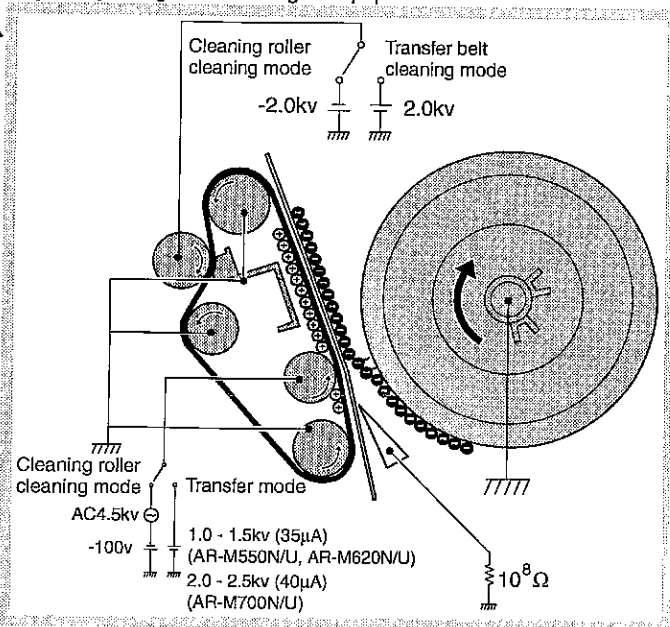


C. Operational descriptions

1) Toner image transfer

Toner images formed on the drum by the developing roller are transferred to paper by the transfer belt.

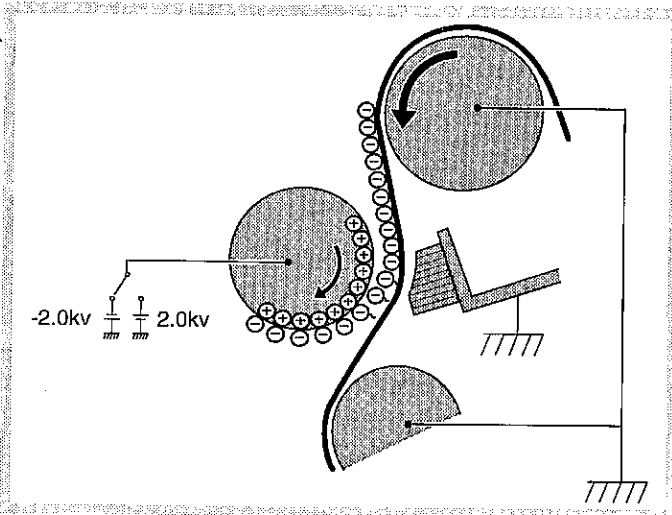
Toner on the drum is negatively charged by stirring in the developing unit. By applying a positive voltage to the transfer roller, the transfer belt and paper on the transfer belt are positively charged to transfer negatively charged toner images to paper.



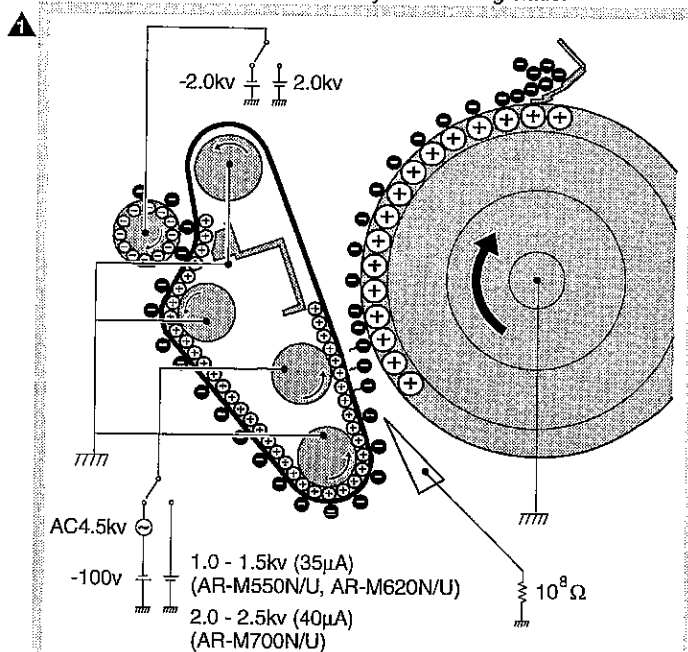
2) Transfer belt cleaning

During the job, a positive voltage is applied to the transfer cleaning roller so that negatively charged toner on the transfer belt is attracted to the cleaning roller.

(The brush on the back of the transfer belt is provided for increasing the cleaning effect.)



After completion of the job, the applied voltage to the transfer cleaning roller is switched to negative, and toner is returned from the transfer cleaning roller to the transfer belt, and toner on the transfer belt is attracted to the drum and cleaned by the cleaning blade.



Cleaning timing:

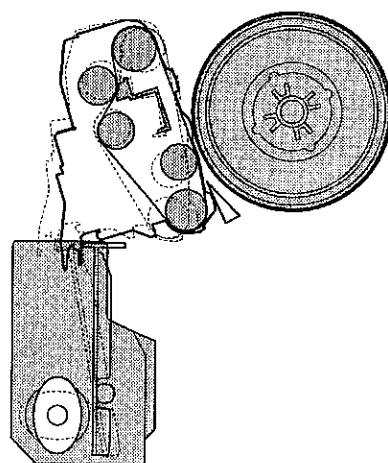
- After completion of the job
- When warming-up
- After canceling a jam
- After execution of process control

3) Transfer belt separation/contact

Transfer belt is separated by the transfer separation motor.

The transfer belt is in contact with the drum except for the following cases:

- When executing process control (to prevent against breakage of toner patch on the drum)
- When a jam occurs (Protection of the drum, left door open/close)
- When shipping (Protection of the drum. Separate with the simulation 6-1 (7).)



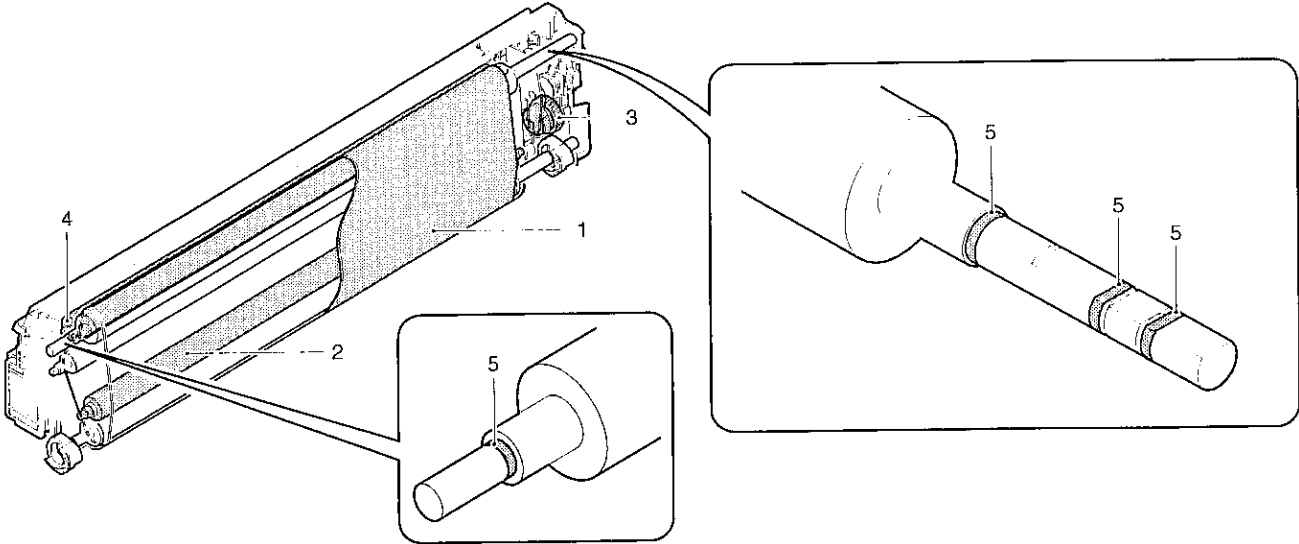
D. Maintenance and parts replacement

(1) Maintenance list

X: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| Unit name | No. | Part name | When calling | AR-M550U/N (PM: 250K) | | | | | | | | Remark |
|------------------|-----|---------------------------|--------------|-----------------------|------|------|-------|-------|-------|-------|-------|---------------|
| | | | | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | |
| Transfer section | 1 | Transfer belt | ○ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 2 | Transfer roller | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | Transfer drive gear | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 4 | Transfer cleaning roller | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 5 | Shaft (Conduction grease) | X | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | UKOG-0012QSZZ |

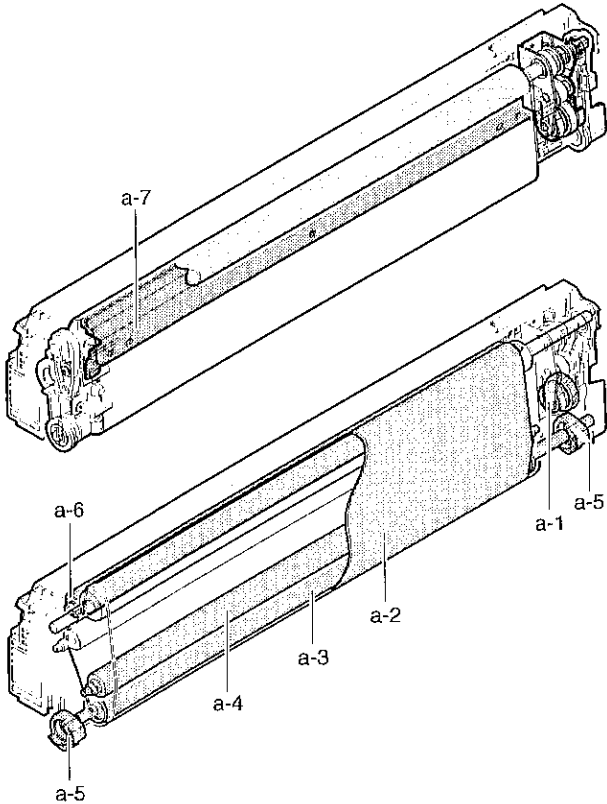
* When cleaning the transfer belt, never use alcohol, solvent, and water.



(2) Maintenance and parts replacement

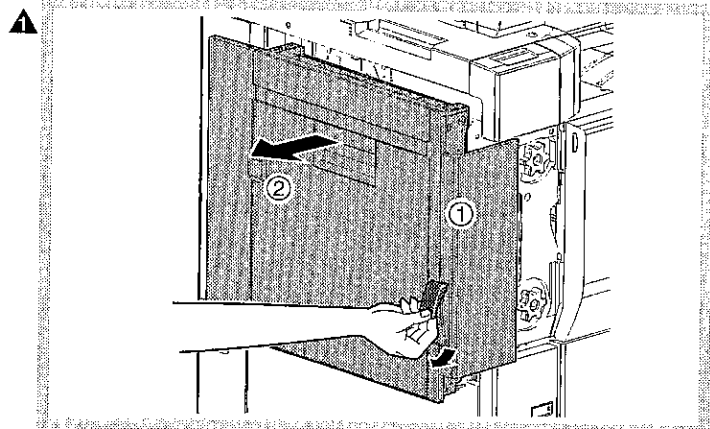
(List of Replacement Parts)

| No. | Unit | Parts | |
|-----|---------------|-------|----------------------------|
| a | Transfer unit | 1 | Transfer drive gear ▲ |
| | | 2 | Transfer belt ○▲ |
| | | 3 | Transfer auxiliary roller |
| | | 4 | Transfer roller ▲ |
| | | 5 | Transfer roller collar |
| | | 6 | Transfer cleaning roller ▲ |
| | | 7 | Transfer cleaning brush |

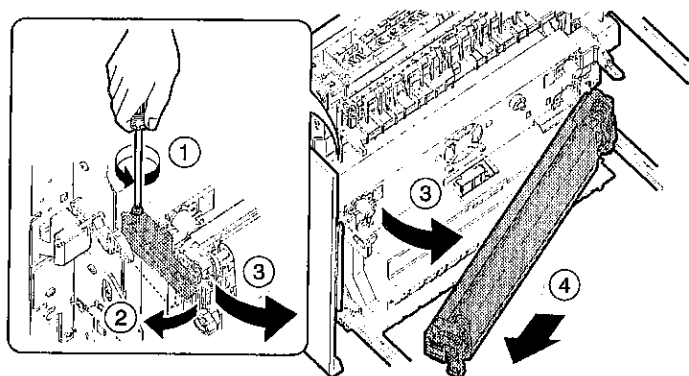


a. Transfer unit

- 1) Open the left door unit.

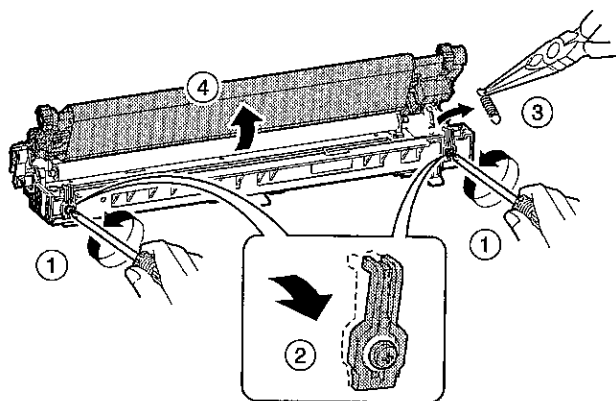


- 2) Loosen the blue screw and open the holder to remove the transfer unit.

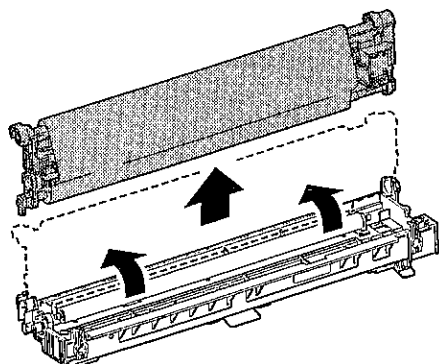


a-1. Transfer drive gear

- 1) Remove the transfer unit. (See "a. Transfer unit" in this section)
- 2) Loosen the blue screw and unhook the hook lever in order to open the transfer belt unit in the arrowed direction.

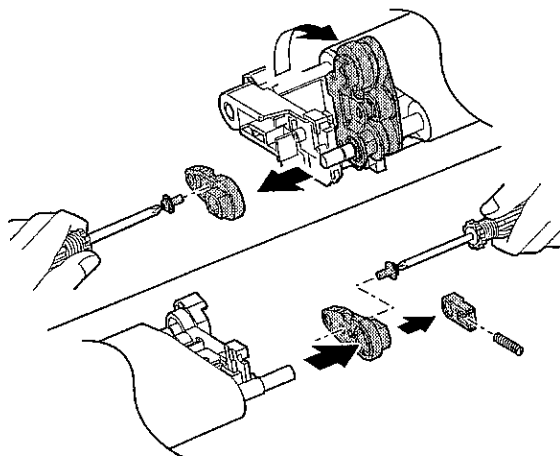


- 3) Remove the spring.
- 4) Remove the transfer belt unit in the arrowed direction.

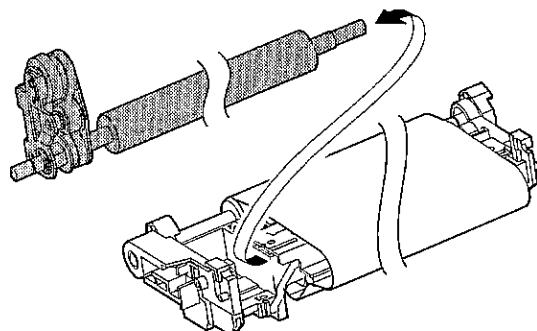


- 5) Remove the transfer belt unit. (See "a-1. Transfer drive gear" in this section)

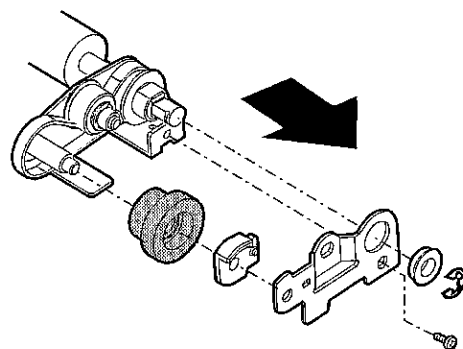
- 6) Remove the ground members.



- 7) Remove the blue screw to remove the roller fixing members.
- 8) Pull out the upper transfer roller unit from the transfer belt.

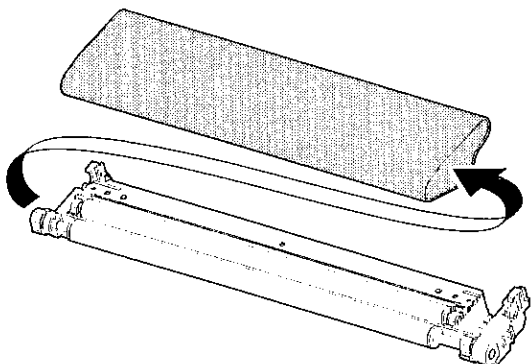


- 9) Remove the E-ring and screw to remove the transfer drum gear.



a-2. Transfer belt

- 1) Remove the transfer unit. (See "a. Transfer unit" in this section)
- 2) Remove the transfer belt unit. (See "a-1. Transfer drive gear" in this section)
- 3) Remove the upper transfer roller unit.
- 4) Pull out the transfer belt.

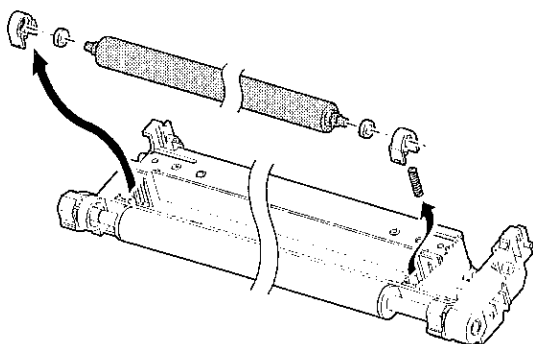


a-3. Transfer auxiliary roller

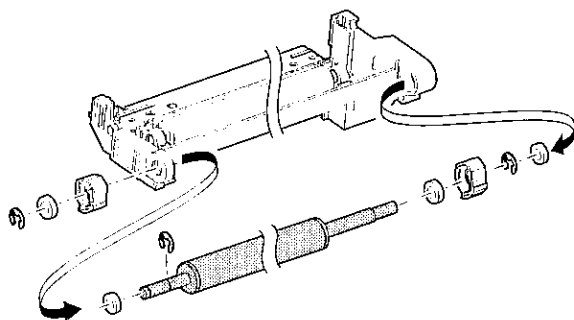
a-4. Transfer roller

a-5. Transfer roller collar

- 1) Remove the transfer unit. (See "a. Transfer unit" in this section)
- 2) Remove the transfer belt unit. (See "a-1. Transfer drive gear" in this section)
- 3) Remove the upper transfer roller unit.
- 4) Remove the transfer belt. (See "a-2. Transfer belt" in this section)
- ▲ 5) Remove the transfer tension roller bearing to remove the transfer roller.



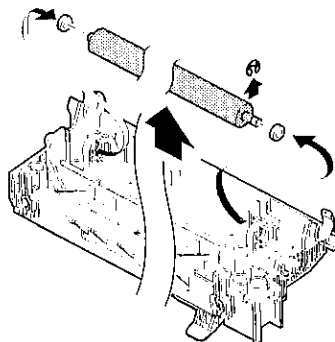
- 6) Remove the E-ring to remove the transfer roller collar.



- 7) Remove the E-ring to remove the transfer roller transfer roller collar.

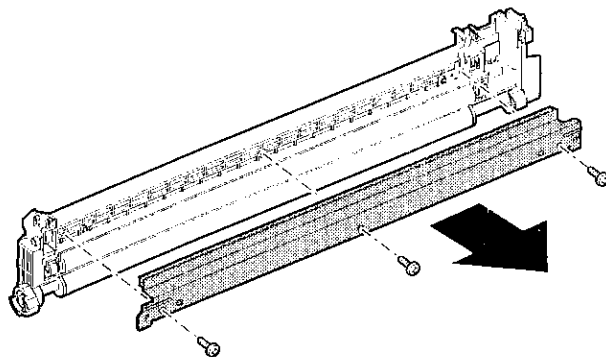
a-6. Transfer cleaning roller

- 1) Remove the transfer unit. (See "a. Transfer unit" in this section)
- 2) Remove the transfer belt unit. (See "a-1. Transfer drive gear" in this section)
- ▲ 3) Remove the E-ring to remove the transfer cleaning roller.



a-7. Transfer cleaning brush

- 1) Remove the transfer unit. (See "a. Transfer unit" in this section)
- 2) Remove the transfer belt unit. (See "a-1. Transfer drive gear" in this section)
- 3) Remove the upper transfer roller unit.
- 4) Remove the transfer belt. (See "a-2. Transfer belt" in this section)
- 5) Remove the cleaning brush.

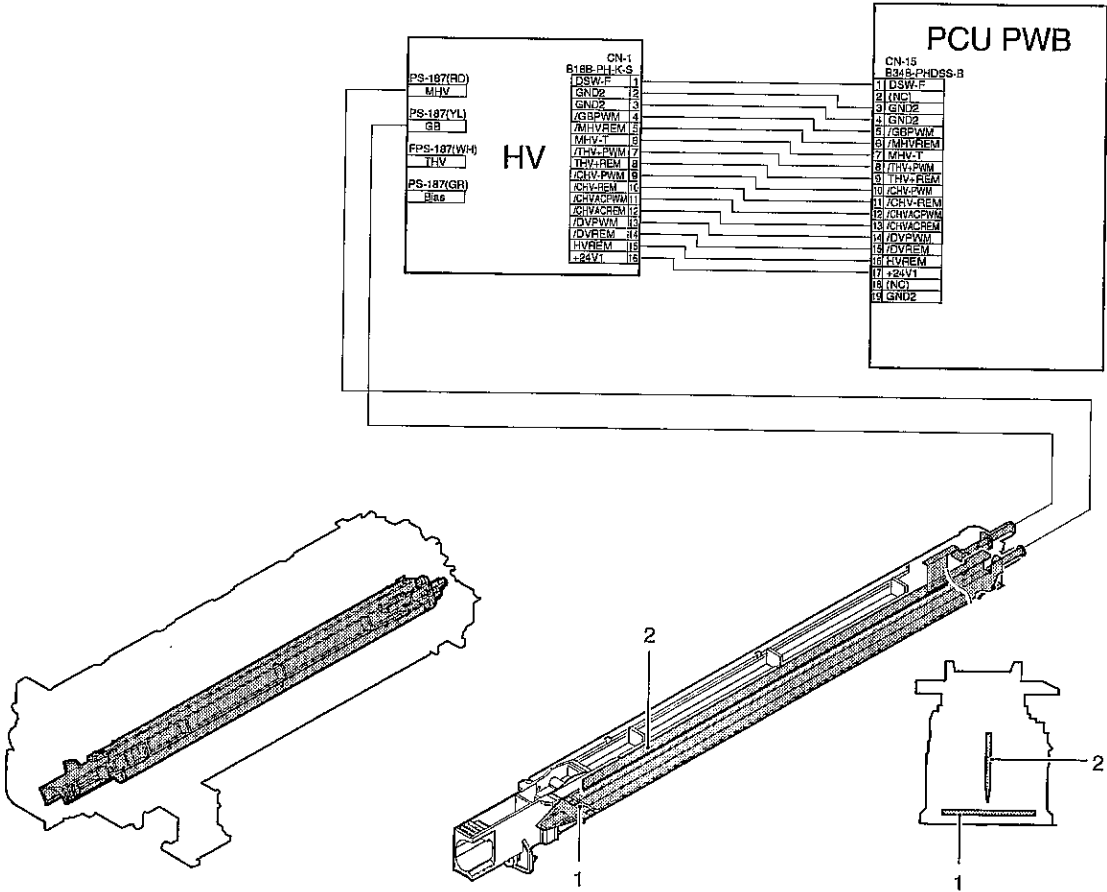


[Main charger section]

A. General

The OPC drum surface is negatively charged in this section.

B. Major parts and signal functions



| No. | Name | Operation |
|-----|-----------------|--|
| 1 | Screen grid | Charges the OPC drum evenly. / Charges the OPC drum. |
| 2 | Saw teeth plate | Charges the OPC drum. |

C: Maintenance and parts replacement

(1) Maintenance and parts replacement

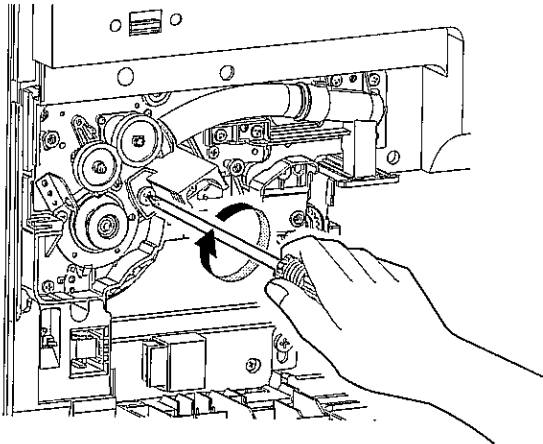
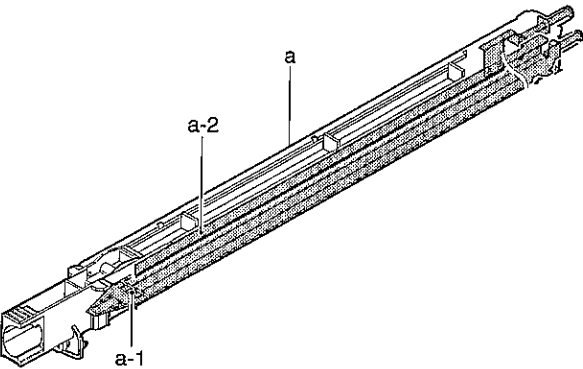
(Replacement parts)

| No. | Unit | Parts |
|-----|-------------------|-------------------|
| a | Main charger unit | 1 Screen grid |
| | | 2 Saw teeth plate |
| | | 3 MC cleaner |

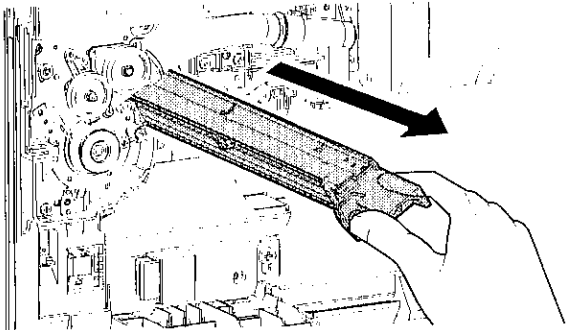
a. Main charger unit

1) Remove the front door.

▲ 2) Loosen the blue screw.

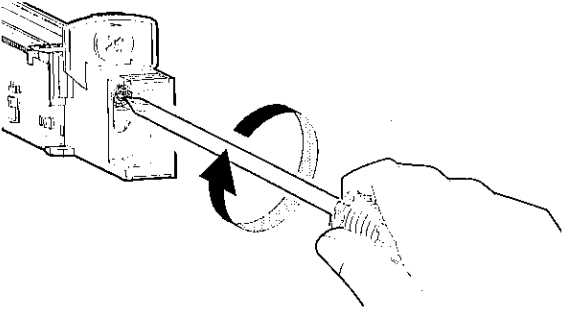


4) Remove the main charger unit.

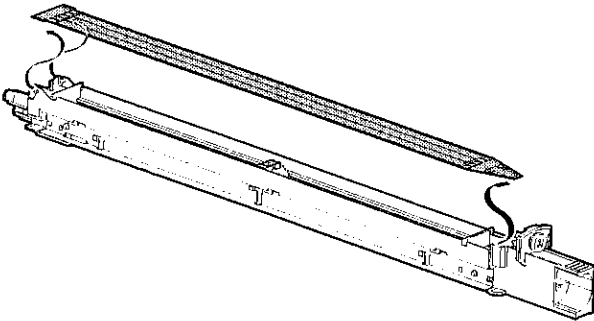


a-1. Screen grid

▲ 1) Loosen the screw.

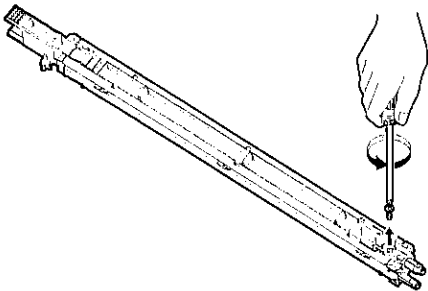


2) Remove the screen grid from the claw.

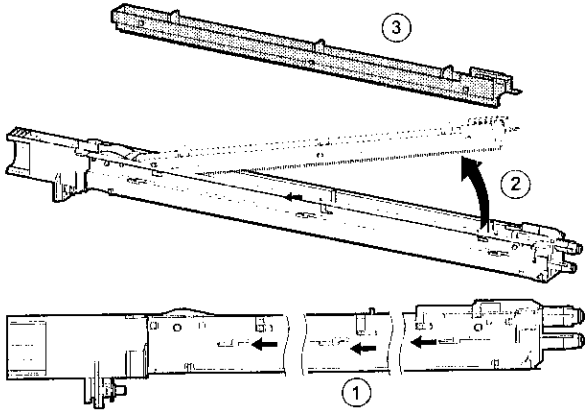


a-2. Saw teeth plate

1) Remove the blue screw.

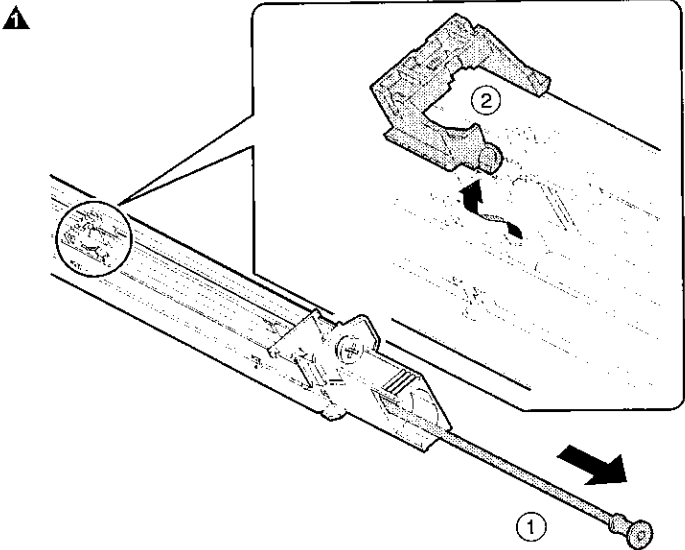


2) Lifting one end up, slide off the saw blade holder.

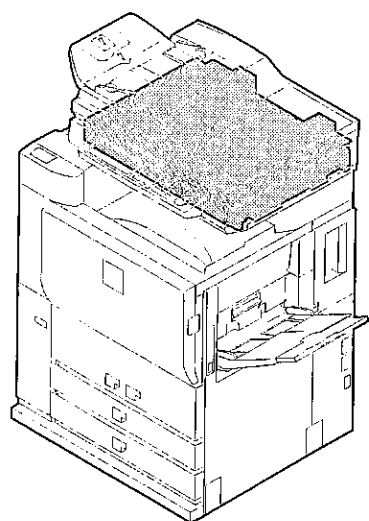


a-3. MC cleaner

- 1) Remove the screen grid. (See "a-1. Screen grid" in this section)
- 2) Remove the saw teeth plate. (See "a-2. Saw teeth plate" in this section)
- 3) Remove the MC cleaner.



5. Scanner section

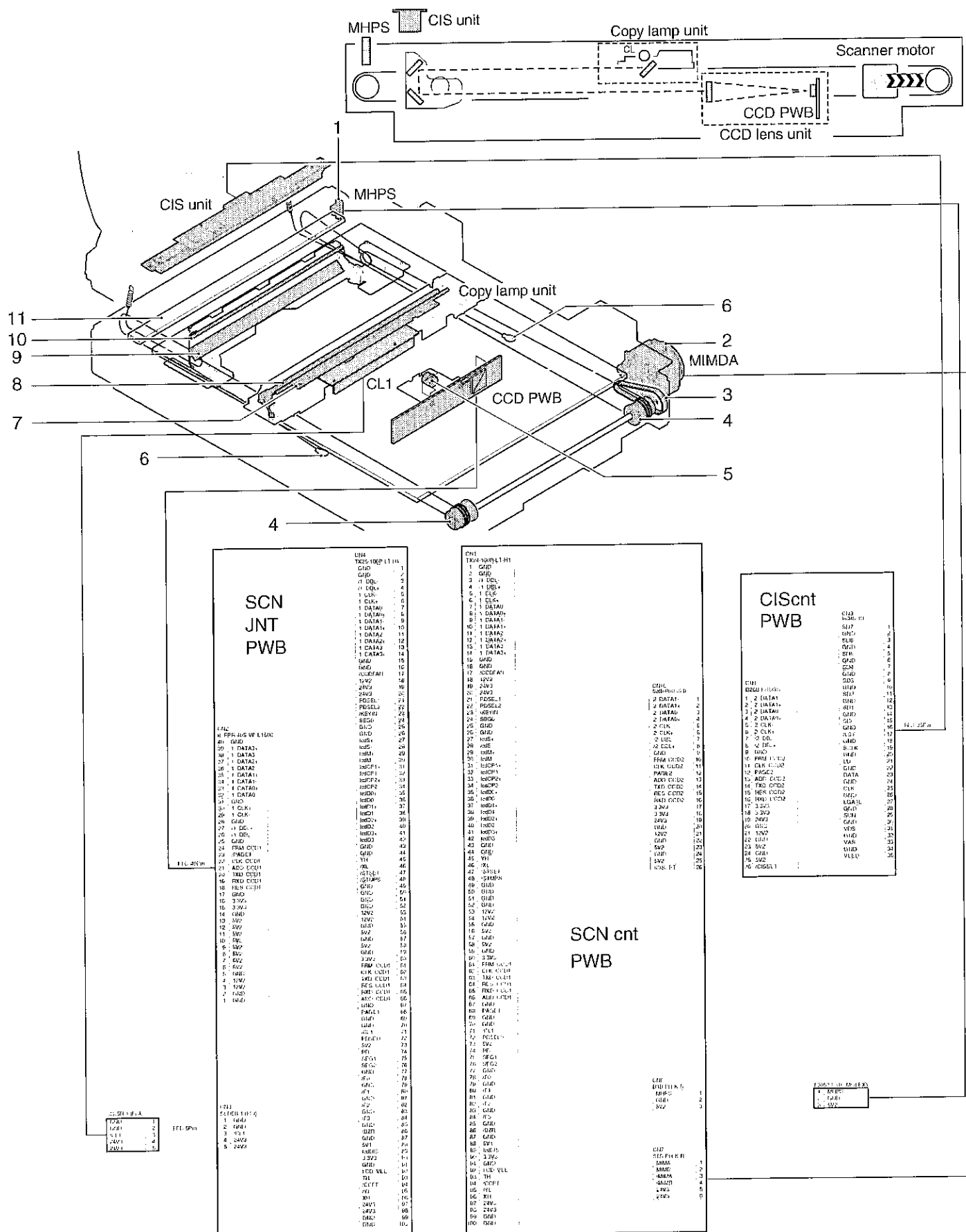


A. General

There are following three methods of scanning documents in this machine.

- a. Place a document on the table glass. The copy lamp unit is operated to radiate copy lamp light onto the document, scanning the document with the CCD.
- b. The SPF feeds a document. The copy lamp light is radiated onto the document which is stopped at the specified position and the document is scanned by the CCD.
- c. The SPF feeds a document. The LED light of the CIS unit which is attached to the SPF is radiated to the back of the document, and the document is scanned by the CIS.

B. Major parts and signal functions



| Code | Signal name | Name | Function/Operation | Type | Model | Note |
|----------|-------------|---------------------------------------|--|-------------------|-------|--------|
| MIM | MIM | Scanner (reading) motor | Drives the scanner (reading) section. | Stepping motor | | |
| MHPS | MHPS | Scanner home position sensor detector | Scanner home position detection | Transmission type | | Sensor |
| CIS unit | | CIS unit | Contact-type image scan sensor unit Back document image scan | | | |
| CCD PWB | | CCD PWB | Front document image scan (Document table/SPF mode) Converts the document images (optical signals) into electrical signals. | | | |

| No. | Name | Code, signal name | Function |
|-----|--|-------------------|---|
| 1 | Scanner home position sensor | MHPS | Scanner home position detection |
| 2 | Scanner (read) motor | /MIMDA | Drives the scanner (read) section. |
| 3 | Scanner drive belt | | Transmits the scanner motor power to the scanner unit. |
| 4 | Pulley | | Drives the scanner drive wire. |
| 5 | Lens | | Reduces the document images (optical) and radiates them onto the CCD. |
| 6 | Scanner drive wire | | Transmits the scanner motor power to the copy lamp unit and the mirror base unit. |
| 7 | Reflector | | Converges the copy lamp lights. |
| 8 | Scanner lamp | CL1 | Radiates lights onto the document. (Xenon lamp) |
| 9 | No. 3 mirror | | Assures the optical path from No. 2 mirror to the CCD. |
| 10 | No. 2 mirror | | Assures the optical path from No. 1 mirror to No. 3 mirror. |
| 11 | SPF (CIS) white balance sheet / SPF scan glass | | The white reference sheet for scanning with the CIS unit. |

C. Operational descriptions

(1) CCD/lens unit

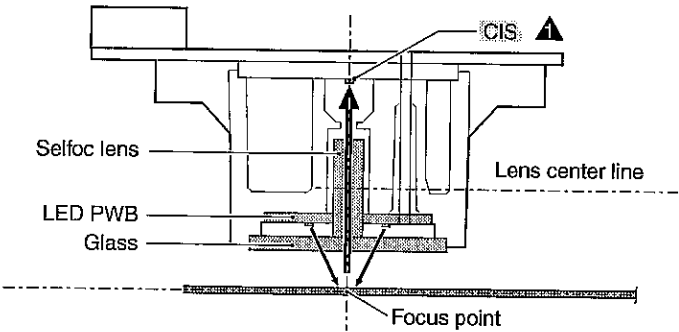
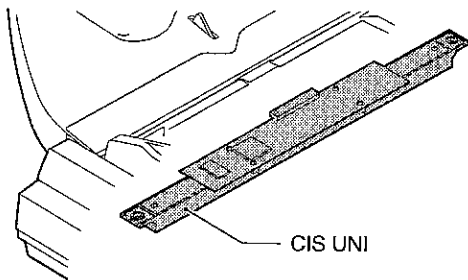
This machine employs the reduction optical-type line CCD (Charge Coupled Device) of scan resolution of 600dpi and 7400 pixels.

CCD scan is performed by shifting the scan positions sequentially by the carriage unit (lamp and mirror) scan or moving the document with the SPF. Lights reflected by the document are reflected by each mirror to form images on CCD elements through the reduction-type lens. The CCD converts the optical energy into electrical energy (analog). (Photoelectric conversion)

(2) CIS unit

The image sensor which scans back document images is attached to the SPF. The close-contact type image sensor (Contact Image Sensor) with scan resolution of 600dpi and 7196 pixels is employed.

For the CIS to scan documents, the scan position is sequentially shifted by shifting the document by the SPF, and the LED light in the unit is radiated to the back of the document, and photo energy is converted into electric energy (analog signal).

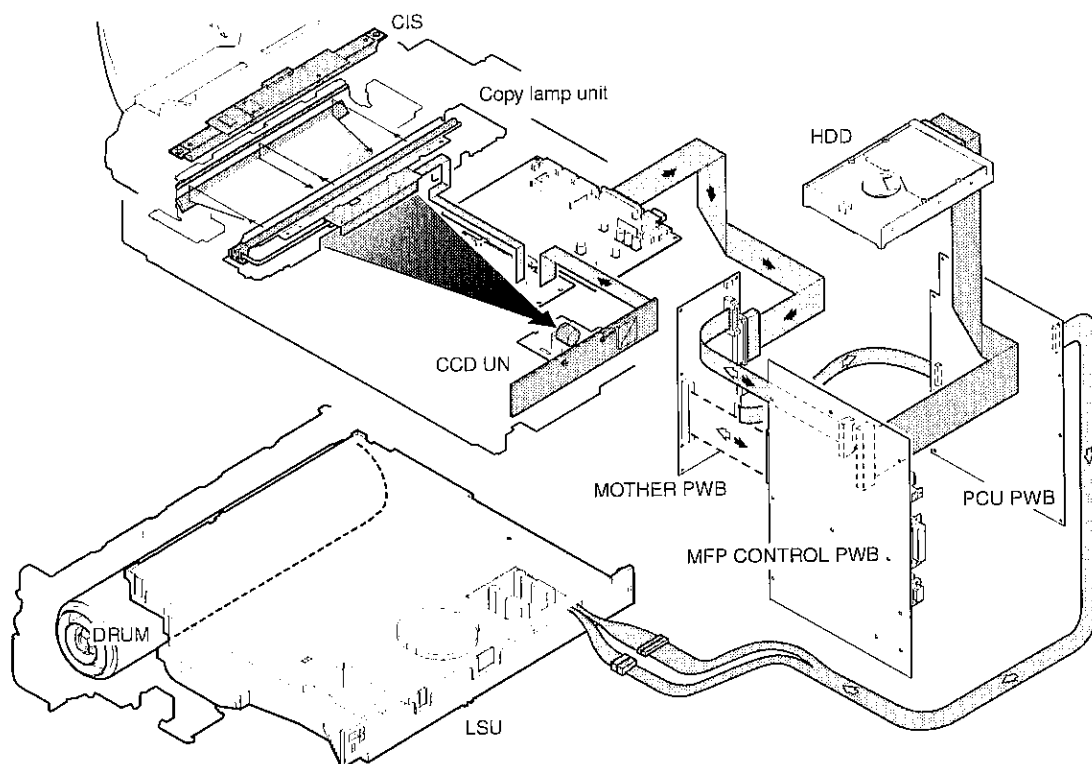


(3) Image signal flow

The image signal converted into electric energy (analog signal) is A-D converted on the CCD PWB. Image processes such as white balance and shading correction are performed on the scanner control PWB. The image signal is then sent through the mother board to the MFP control PWB.

In the MFP control PWB, image process is performed according to the setting content of the operation panel. The image data are converted into laser lighting signals (VIDEO signals), and sent through the mother PWB and the PCU to the LSU (Laser Scan Unit).

In the LSU, the VIDEO signals are converted into laser beams, which are radiated onto the drum.



(4) Carriage (lamp unit) shift (scan) speed

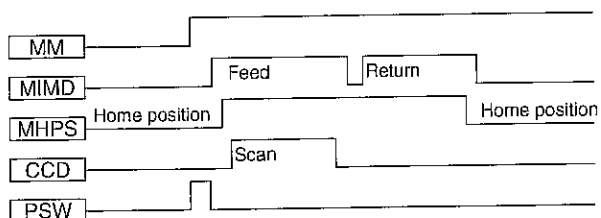
The carriage scan speed depends on the copy magnification ratio.

Speed up to 171% = 220mm/s

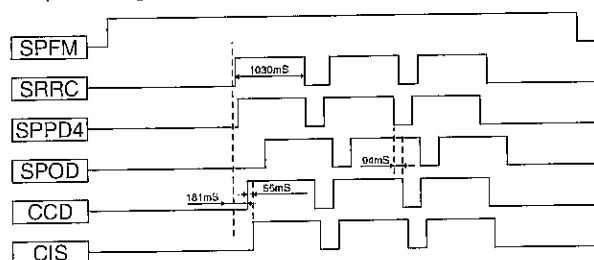
Speed of 172% - 400% = 110mm/s

(5) Timing chart

Platen timing chart



SPF duplex timing chart

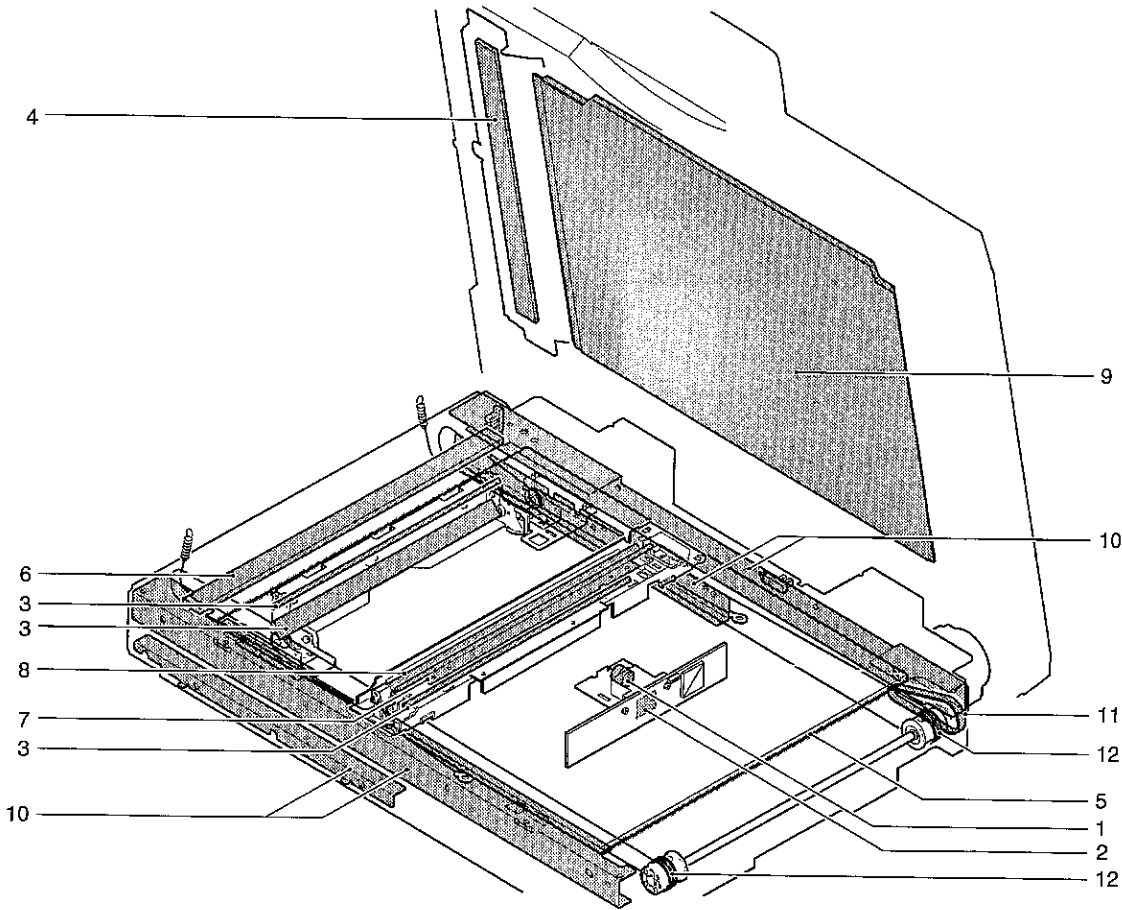


D. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

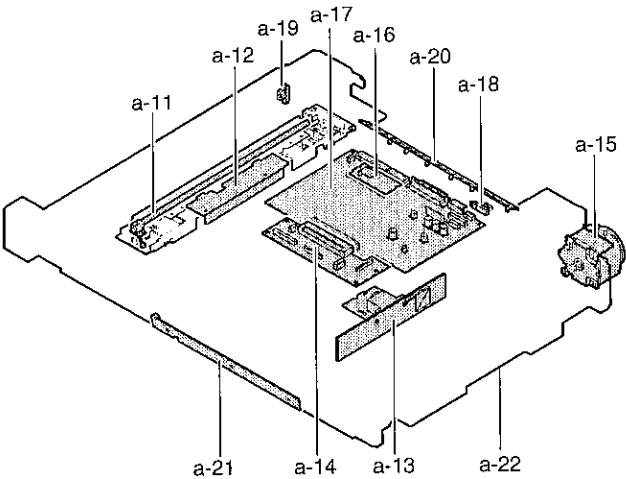
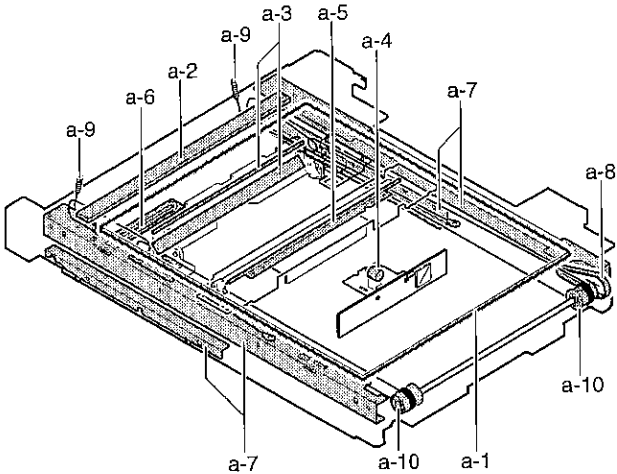
| Unit name | No. | Part name | When calling | AR-M550U/N (PM: 250K) AR-M620U/N, AR-M700U/N (PM: 300k) | | | | | | | | Remark |
|-----------------|-----|----------------------------|--------------|--|--------------|--------------|----------------|----------------|----------------|----------------|----------------|--------|
| | | | | 250K 300K | 500K 600K | 750K 900K | 1000K 1200K | 1250K 1500K | 1500K 1800K | 1750K 2100K | 2000K 2400K | |
| Scanner section | 1 | Lens | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 2 | CCD | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 3 | Sensor | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 4 | CIS filter glass | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 5 | Table glass | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 6 | Slit glass (SPF scan mode) | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 7 | Reflector | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 8 | Scanner lamp | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 9 | Document mat | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 10 | Rail (Grease) | | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | |
| | 11 | Drive belt | | × | × | × | × | × | × | × | × | |
| | 12 | Drive wire | | × | × | × | × | × | × | × | × | |



(2) Maintenance and parts replacement

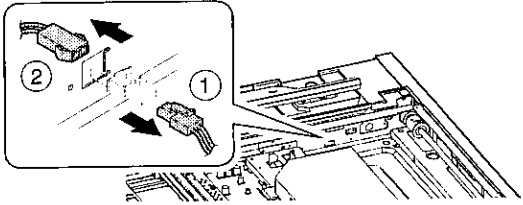
(Replacement parts)

| No. | Unit | Parts | | |
|-----|--------------|-------|---|---|
| a | Scanner unit | 1 | Table glass | ○ |
| | | 2 | Slit glass (SPF scan mode) | ○ |
| | | 3 | Mirror | ○ |
| | | 4 | Lens | ○ |
| | | 5 | Reflector | ○ |
| | | 6 | Scanner dry heater | |
| | | 7 | Rails | ☆ |
| | | 8 | Drive belt | × |
| | | 9 | Drive wire | × |
| | | 10 | Pulley | × |
| a | Scanner unit | 11 | Scanner lamp | ○ |
| | | 12 | Inverter PWB | |
| | | 13 | CCD lens unit | ○ |
| | | 14 | Scanner relay PWB | |
| | | 15 | Scanner motor | |
| | | 16 | Scanner FLASH PWB | |
| | | 17 | Scanner control PWB | |
| | | 18 | SPF open/close detector | |
| | | 19 | Scanner home position sensor detector | |
| | | 20 | Document size detection light emitting PWB | |
| | | 21 | Document size detection light receiving PWB | |

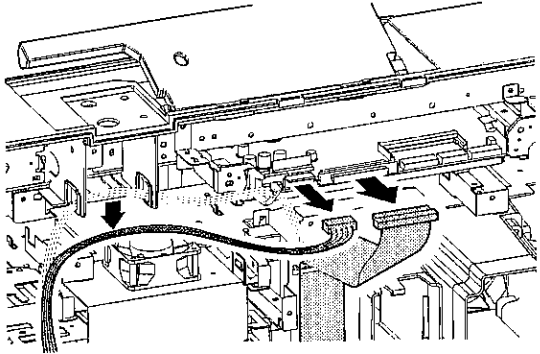


a. Scanner unit

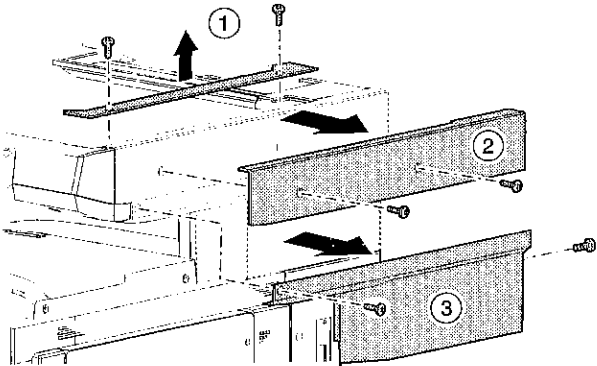
- 1) Remove the SPF unit. (See "a. SPF unit" in the "SPF section")
- 2) Remove the table glass. (See "a-1. Table glass" in this section)
- 3) Remove the panel lock connector. (For dehumidifier heater)



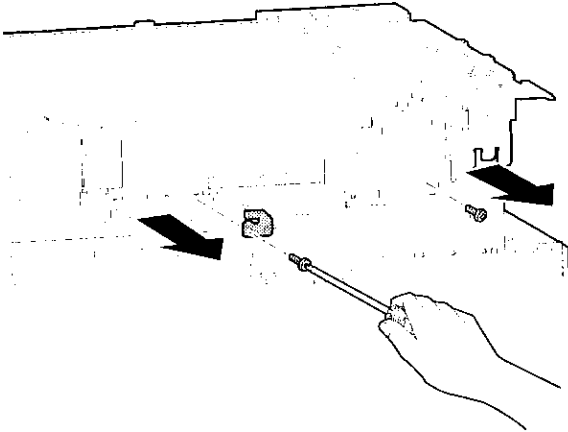
- 4) Remove the flat cable, the connector, and harness from the cable clamp.



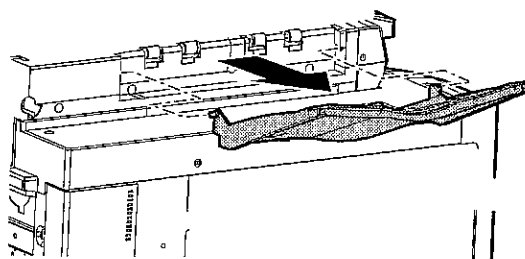
- 5) Remove the right side cabinets upper and lower.



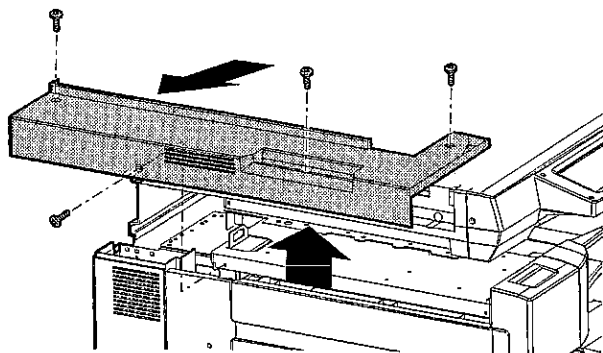
- 6) Remove the screw and the fixing plate.



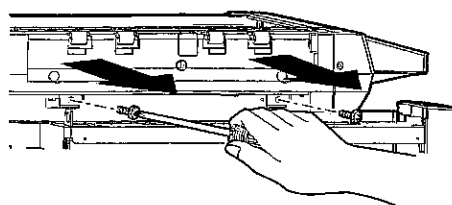
7) Remove the tray.



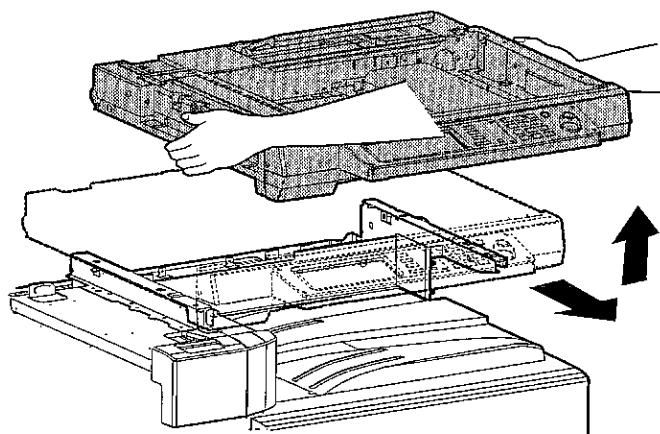
8) Remove the left side cabinets front and rear.



9) Remove the screw.



10) Hold the both sides of the scanner base, and slide it toward you to remove.

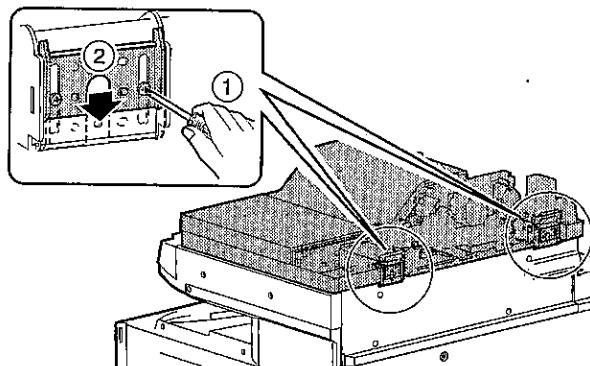


a-1. Table glass

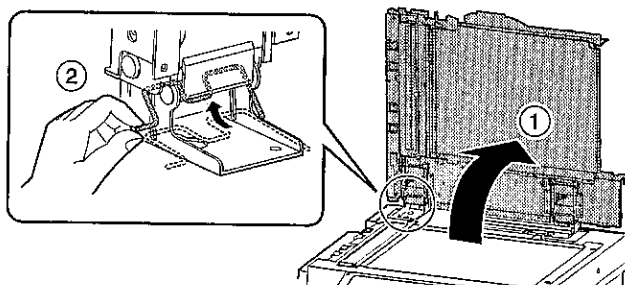
a-2. Slit glass (SPF scan mode)

▲ (When executing internal maintenance of the scanner)

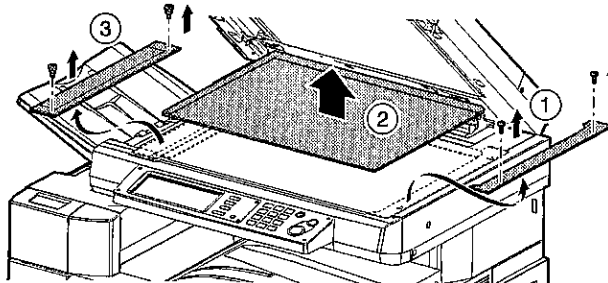
1) Loosen the screws in the hinge section, and lower the two metal fixtures.



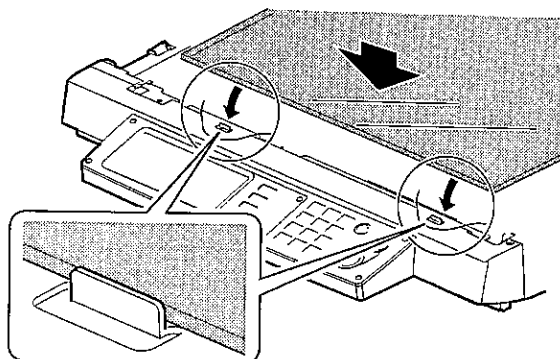
2) Open the SPF, and slide the SPF drop-preventing stopper pin of the Hinge L to the drop preventing position.



3) Remove the right glass holder.



▲ NOTE: When assembling or disassembling the table glass, check that the glass does not cover the steel plate on the front side.



4) Using a cloth, etc. on the right glass surface to prevent fingerprints, remove the cover.

5) Remove the white reference glass unit.

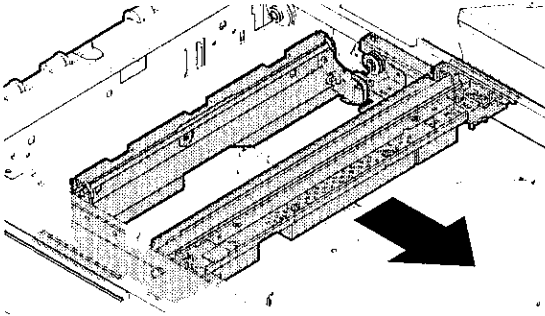
▲ : Feb. 6 2004

a-3. Mirror

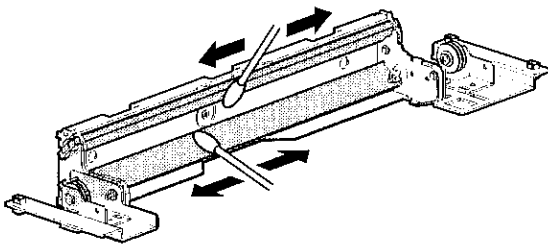
a-4. Lens

a-5. Reflector

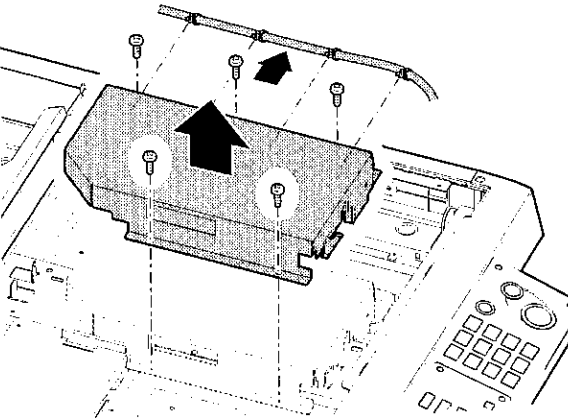
- 1) Remove the table glass. (See "a-1. Table glass" in this section)
- 2) Move the lamp unit.



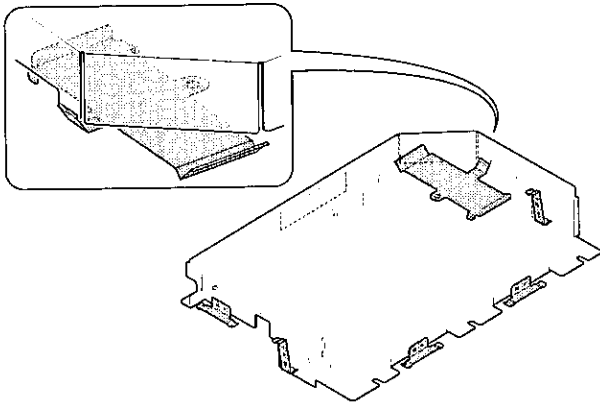
- 3) Clean mirrors 2 and 3.



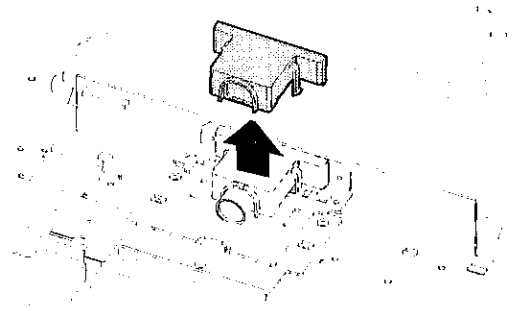
- ▲ 4) Remove the harness clamp and the dark box.



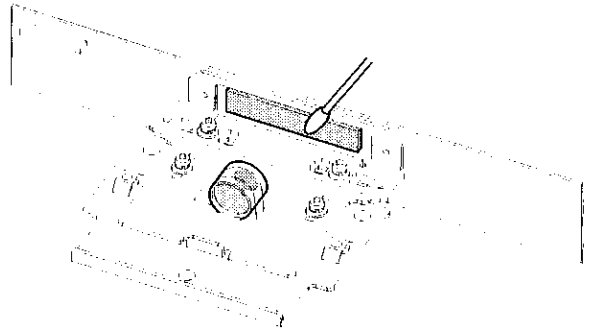
NOTE: When attaching the dark box cover, check to insure that the blade spring is in the original position.



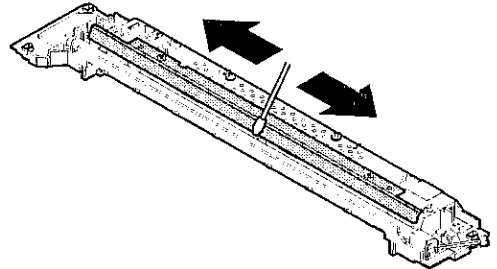
- 5) Remove the lens cover.



- 6) Carry out cleaning of the lens and CCD.

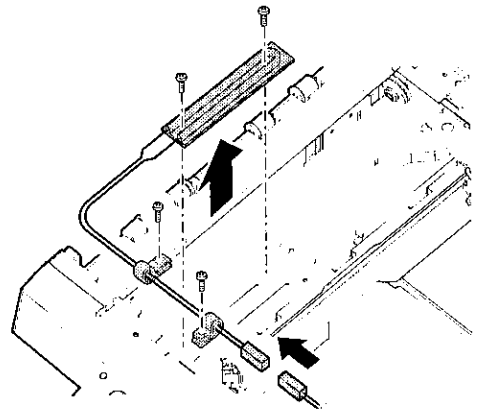


- 7) Carry out cleaning of the reflector.



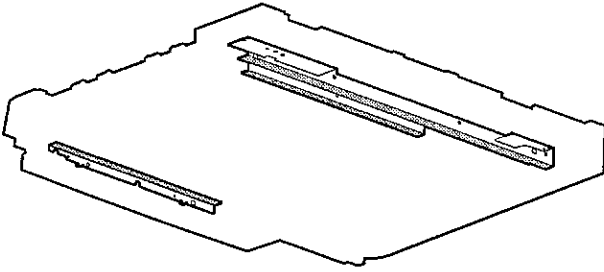
a-6. Scanner dry heater

- 1) Remove the table glass. (See "a-1. Table glass" in this section)
- ▲ 2) Shift the lamp unit, and remove the dark box. (See "a-3. Mirror" in this section)
- 3) Remove the dark box and remove the harness clamp, and remove the scanner dry heater.



a-7. Rails

- 1) Remove the table glass. (See "a-1. Table glass" in this section)
- 2) Grease up the rails.

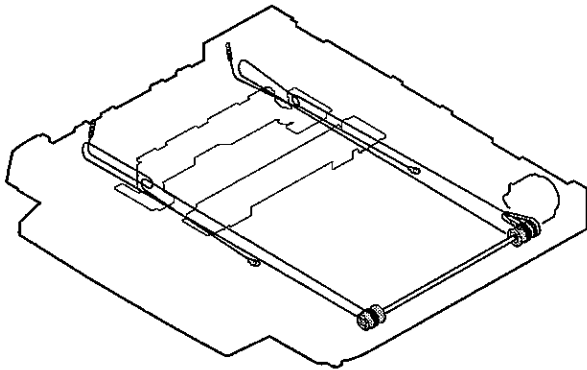


a-8. Drive belt

a-9. Drive wire

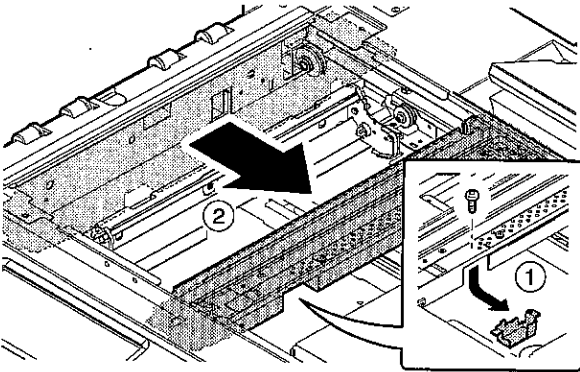
a-10. Pulley

- 1) Remove the table glass. (See "a-1. Table glass" in this section)
- 2) Check the drive belt, drive wire and pulley

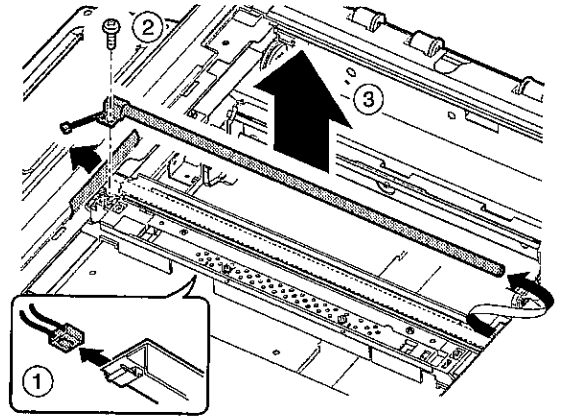


a-11. Scanner lamp

- 1) Remove the table glass. (See "a-1. Table glass" in this section)
- 2) Remove the core guide to shift the optical lamp unit to the base plate cutout section.



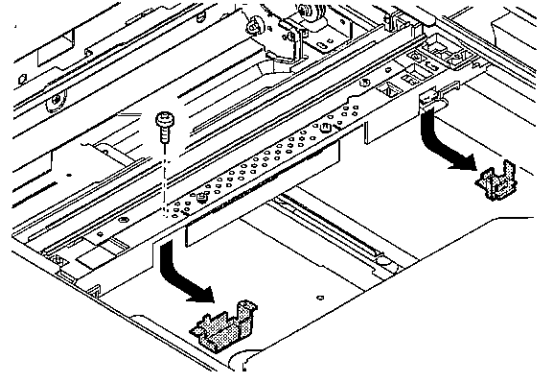
- 3) Remove the front side connector.



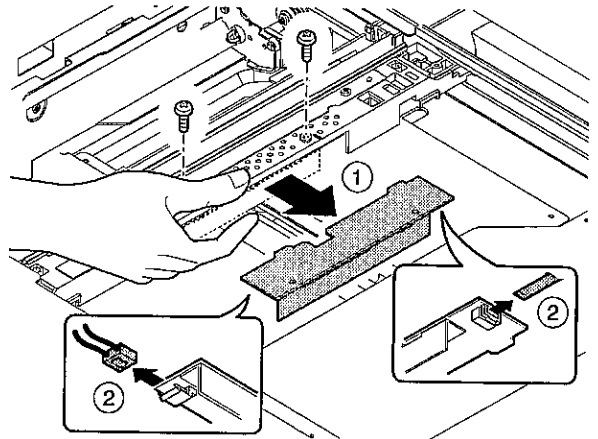
- 4) Turn up the cutout mylar and remove the screw; then shift the lamp holder to the front side and take out the lamp from above on the rear side.
- 5) Remove the harness connector from the hole on the front side.

a-12. Inverter PWB

- 1) Remove the table glass. (See "a-1. Table glass" in this section)
- 2) Remove the core guide.



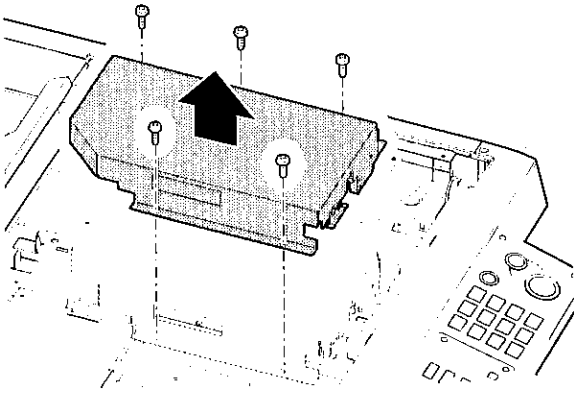
- 3) Unhook the claw to remove the plastic members on the rear side.
- 4) While holding to prevent from falling, remove the screw fixing to remove the inverter PWB.



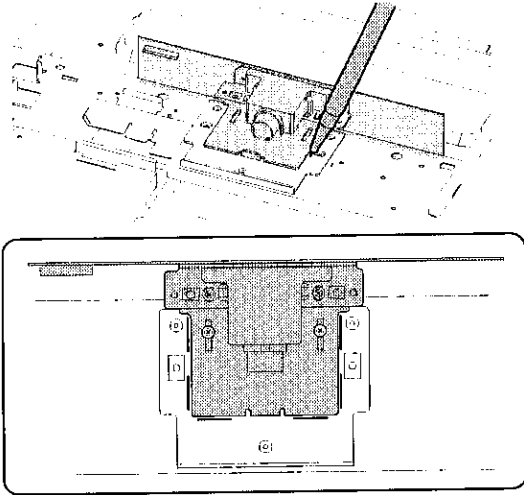
- 5) Disconnect the lamp connectors.
- 6) Release the connector lock on the inverter PWB to remove the FC cable.
- 7) When attaching, place each harness on the rib.

a-13. CCD lens unit

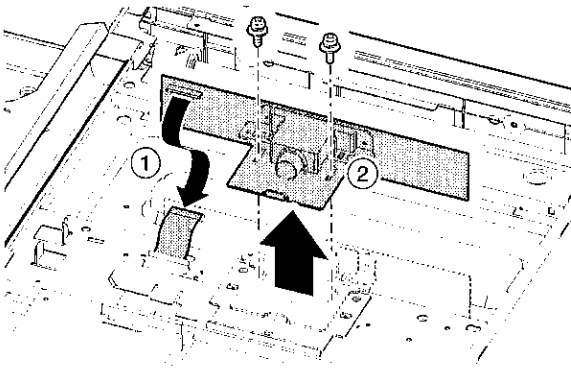
- 1) Remove the table glass. (See "a-1. Table glass" in this section)
- 2) Remove the harness clamp and the dark box.



- 3) Mark the lens unit plate position by pen.



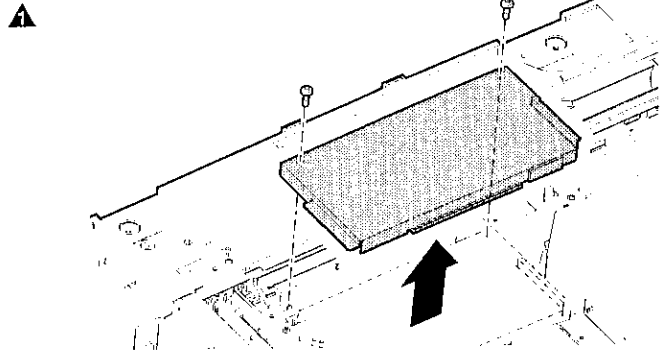
- 4) Release the connector lock on the CCD PWB to remove the FFC cable.



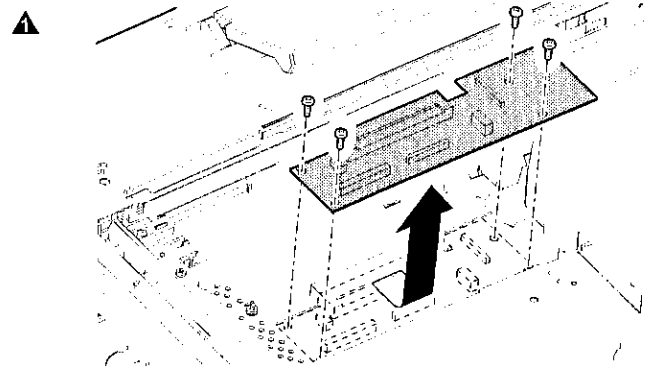
- 5) Remove the screw to remove the CCD PWB lens unit.
- 6) Attach the CCD PWB lens unit to the marked position.

a-14. Scanner relay PWB

- 1) Remove the table glass. (See "a-1. Table glass" in this section)
- 2) Remove the harness cover B.

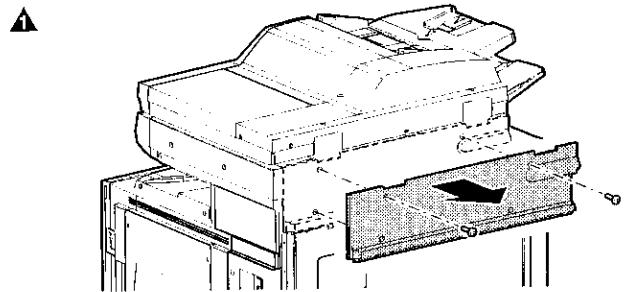


- 3) Disconnect the connector, and remove the scanner interface PWB.

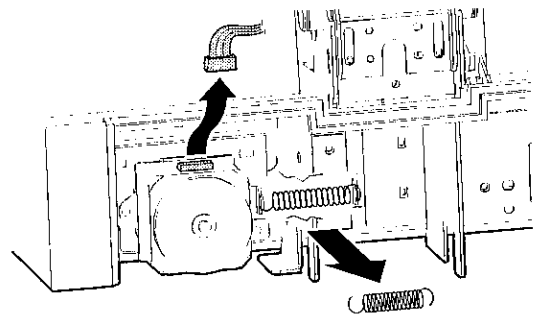


a-15. Scanner motor

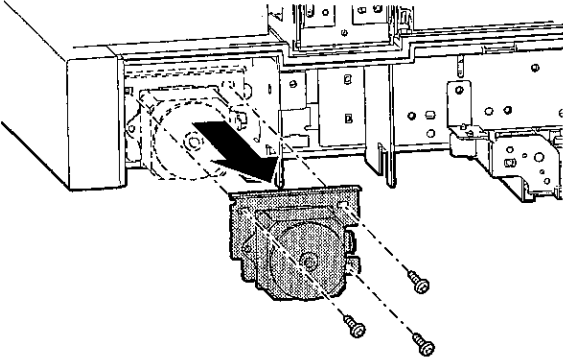
- 1) Remove the rear cabinet.



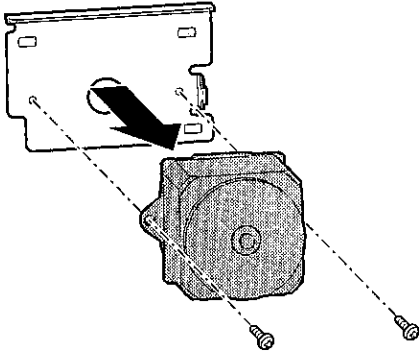
- 2) Remove the spring and disconnect the connector.



- 3) Remove the scanner motor unit.



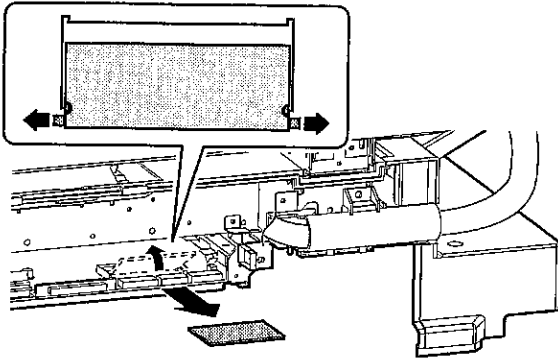
- 4) Remove the scanner motor.



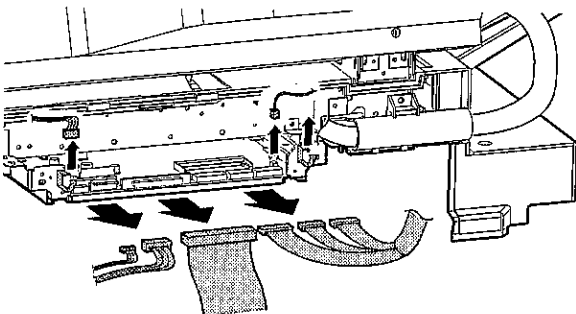
a-16. Scanner FLASH PWB

a-17. Scanner control PWB

- 1) Remove the rear cabinet. (See "a-15. Scanner motor" in this section)
- 2) Release the lock, and remove the scanner Flash PWB.

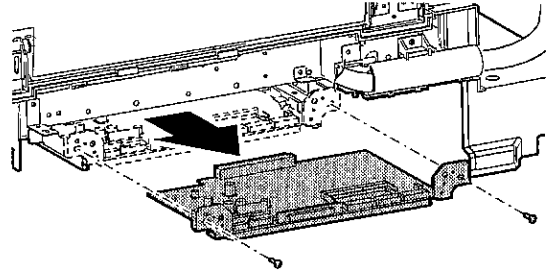


- 3) Remove the clamp, and disconnect the connector.

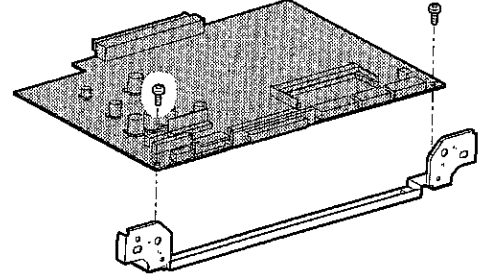


NOTE: Do not disconnect the PCN harness connector.

- 4) Remove the scanner control PWB unit.



- 5) Remove the scanner control PWB.



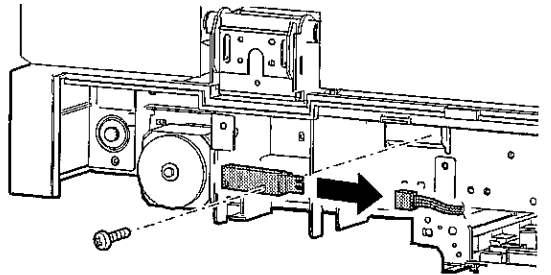
a-18. SPF open/close detector

- 1) Remove the rear cabinet. (See "a-15. Scanner motor" in this section)
- 2) Disconnect the connector, and remove the SPF open/close detector.



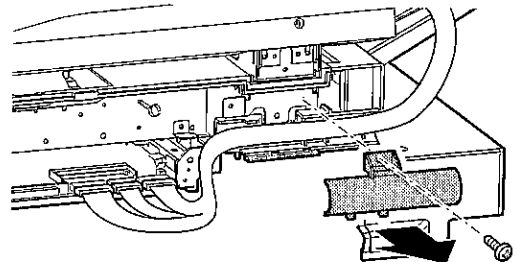
[Note for handling]

- When disconnecting the connector, hold the housing section and slide straightly to remove.

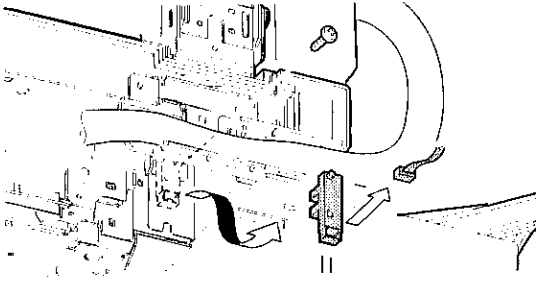


a-19. Scanner home position sensor detector

- 1) Remove the rear cabinet. (See "a-15. Scanner motor" in this section)
- 2) Remove the SPF harness holder B.

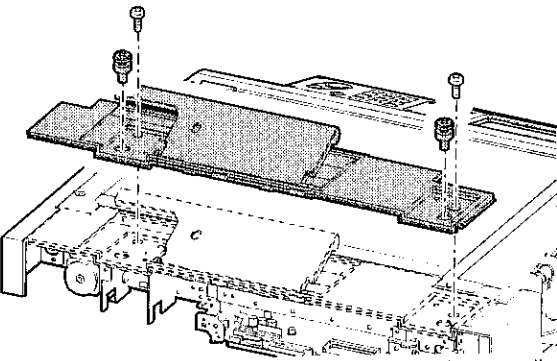
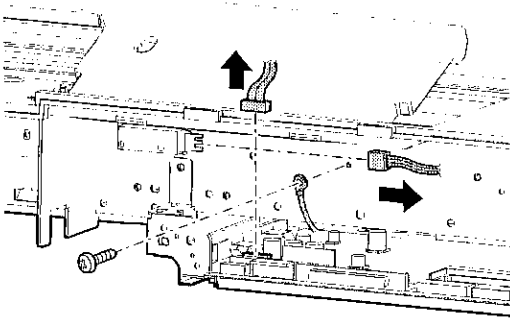


- 3) Disconnect the connector, and remove the scanner home position sensor.

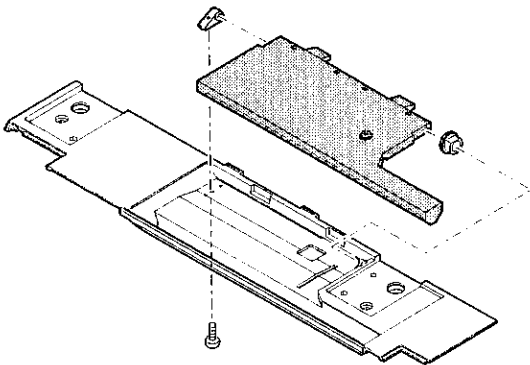


a-20. Document size detection light emitting PWB

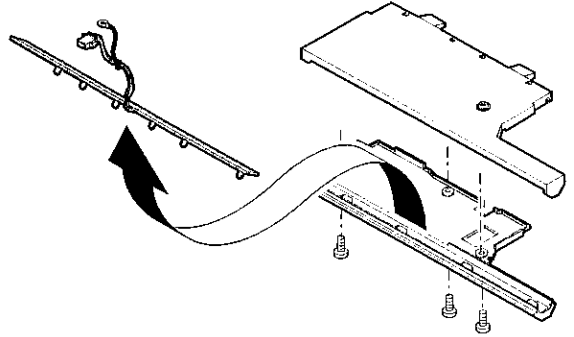
- 1) Remove the SPF unit. (See "a. SPF unit" in the "7. SPF section")
- 2) Disconnect the connector and the earth terminal, and remove the upper cabinet rear.



- 3) Remove the document detection fulcrum TIG, and remove the document detection arm unit.

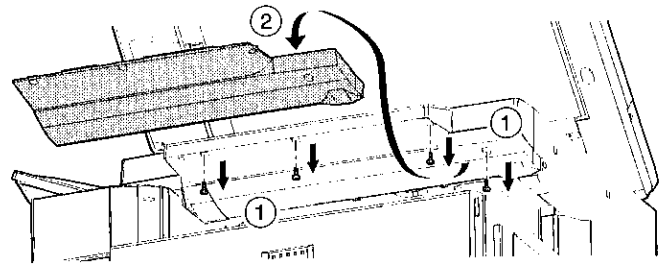


- 4) Remove the document detection arm lower, and remove the document detection light emitting unit.

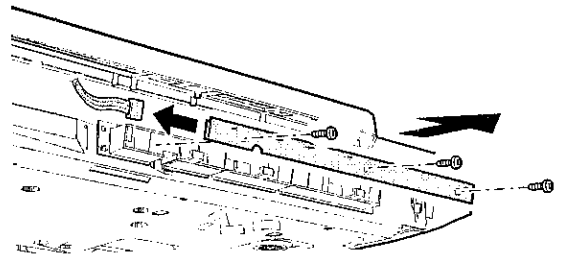


a-21. Document size detection light receiving PWB

- 1) Remove the operation base plate A.



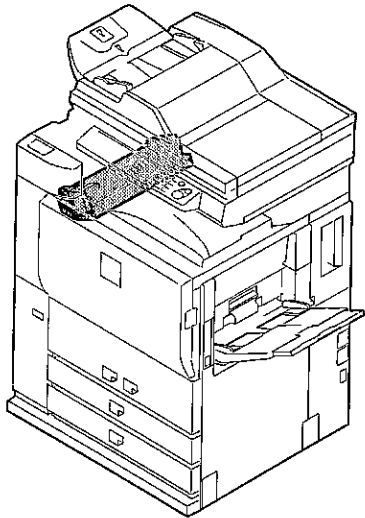
- 2) Remove the document size detection light receiving PWB., and disconnect the connector.



▲ [Note for assembly]

- First, connect the harness to the PWB, and check that PWB parts are properly connected. Then attach the PWB to the PWB holder.

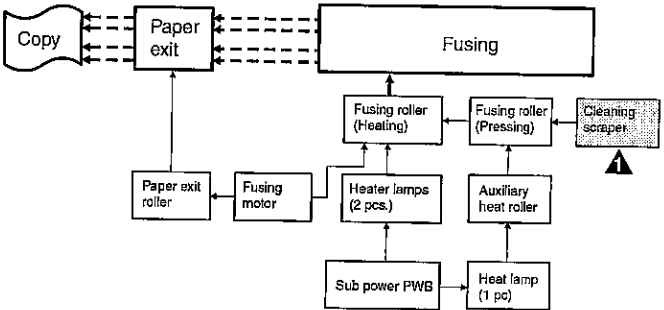
6. Fusing section



A. General

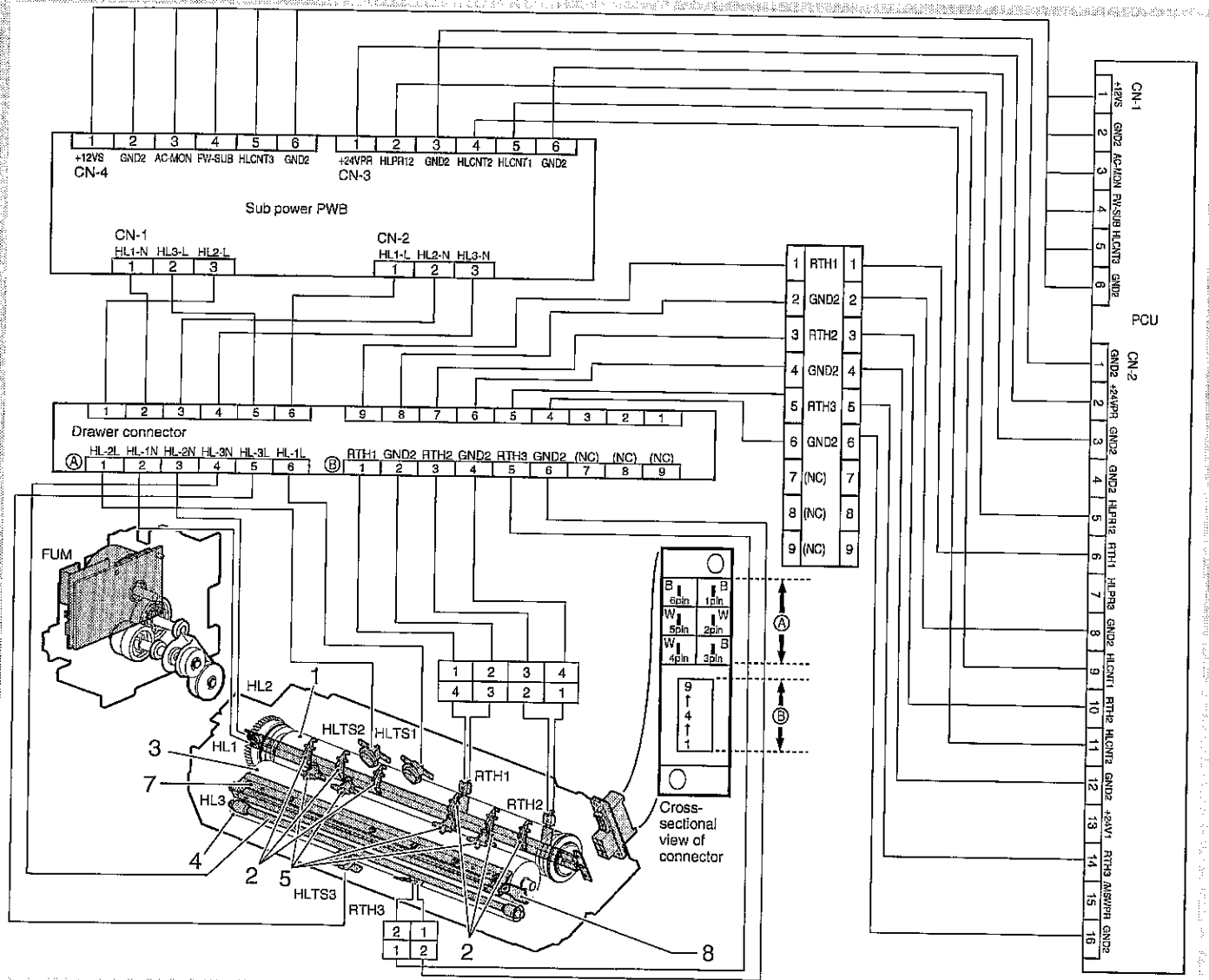
This section performs the following functions and operations.

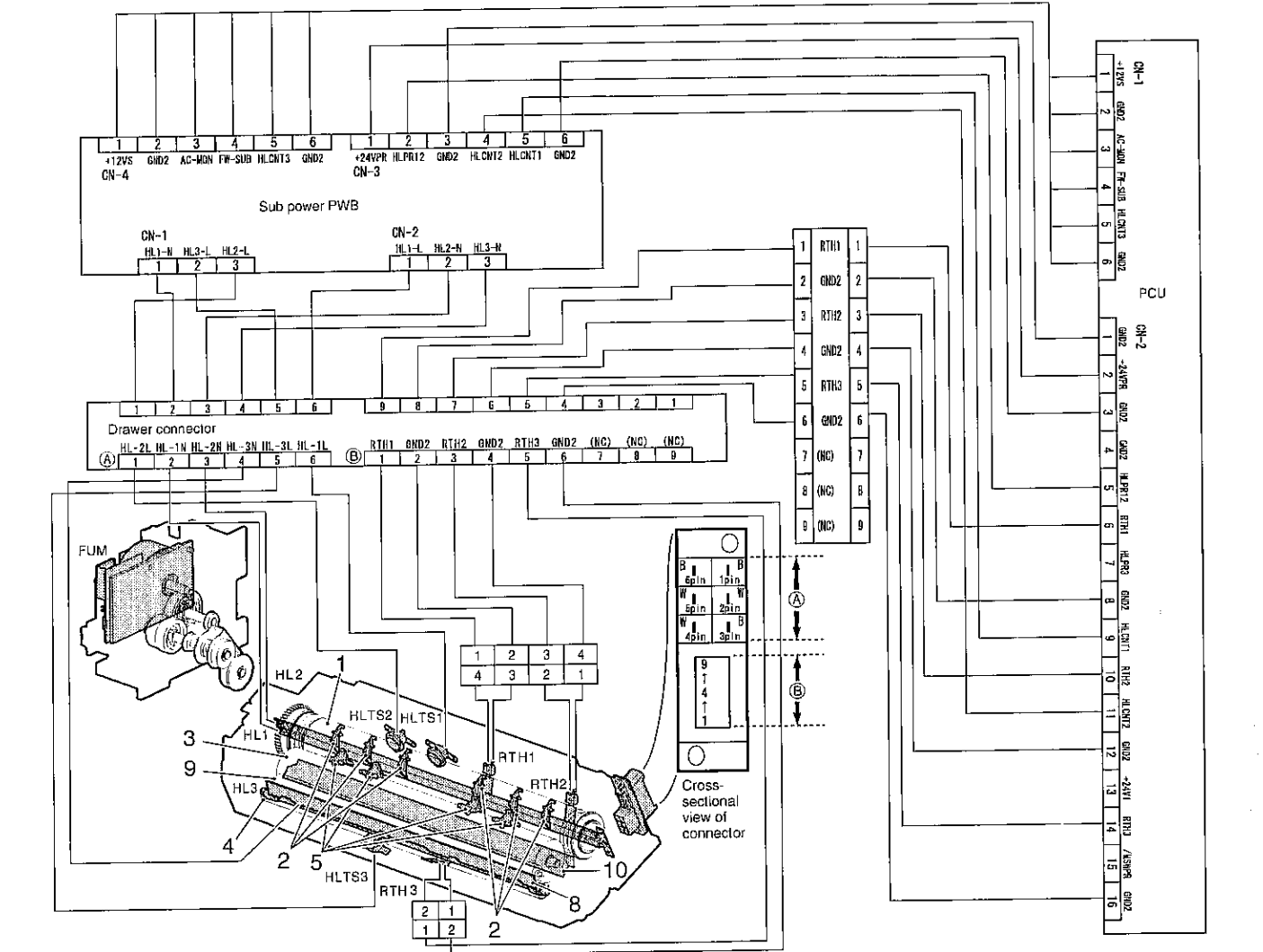
- 1) Toner attached to paper in the transfer section are heated and pressed onto paper to fuse.
- 2) The auxiliary heat roller is used to improve fusing capacity and separation capacity after fusing.



B. Major parts and signal functions

■ AR-M550N/U, AR-M620N/U





| Code | Signal name | Name | Type | Function/Operation | Active condition | Note |
|-------|-------------|-------------------------------|------------|--|------------------|------|
| RTH1 | RTH1 | Fusing temperature sensor (1) | Thermistor | Detects the surface temperature of the fusing roller (heating). (Center section) | Analog input | |
| RTH2 | RTH2 | Fusing temperature sensor (2) | Thermistor | Detects the surface temperature of the fusing roller (heating). (Edge section) | Analog input | |
| HLTS1 | HLTS1 | Thermostat (1) | | Shuts conduction to the heater lamp when the temperature rises abnormally. [For the fusing roller (heating)] | | |
| HLTS2 | HLTS2 | Thermostat (2) | | Shuts conduction to the heater lamp when the temperature rises abnormally. [For the fusing roller (heating)] | | |
| HL1 | HL1 | Heater lamp (1) | | Heats the fusing roller (heating). | | |
| HL2 | HL2 | Heater lamp (2) | | Heats the fusing roller (heating). | | |
| RTH3 | RTH3 | Fusing temperature sensor (3) | Thermistor | Detects the surface temperature of the auxiliary heat roller. | | |
| HLTS3 | HLTS3 | Thermostat (3) | | Shuts conduction to the heater lamp when the temperature rises abnormally. [For the auxiliary heat roller] | Analog input | |
| HL3 | HL3 | Heater lamp (3) | | Heats the auxiliary heat roller. | | |
| FUM | FUM | Fusing motor | | Drives the fusing unit. | | |

| No. | Name | Function/Operation | Active condition | Note |
|-----|--------------------------|--|------------------|------|
| 1 | Fusing roller (heating) | Heats toner on paper and fuses it on paper. | | |
| 2 | Separation pawl | Mechanically separates paper which was not separated naturally from the fusing roller (heating). | | |
| 3 | Fusing roller (pressing) | Heats and presses toner on paper. | | |
| 4 | Auxiliary heat roller | Heats the fusing roller (pressing). | | |
| 5 | Separation pawl | Mechanically separates paper which was not separated naturally from the fusing roller (heating). | | |

| No. | Name | Function/Operation | Active condition | Note |
|-----|-------------------------|---|------------------|--------------------------|
| 7 | Fusing cleaning scraper | Cleans the surface of the fusing roller (pressing). | | (AR-M550N/U, AR-M620N/U) |
| 8 | Cleaning sheet | Clean the sub heat roller surface. | | |
| 9 | Oil roller | Apply oil to the fusing roller. | | (AR-M700N/U) |
| 10 | Cleaning plate | Clean the fusing (pressure) roller surface. | | (AR-M700N/U) |

C. Details of operations

(1) Fusing unit drive

To drive the fusing unit, the drive power is transmitted from the drive motor (FUM) through the connection gear to the upper heat roller gear. The drive motor DC brushless motor is driven according to the control signal sent from the PCU.



(2) Heater lamp drive

The surface temperature of the heat roller detected by the thermistor is sent to the PCU.

When the temperature is lower than the specified level, the heater lamp lighting signal is sent from the PCU to the heater lamp drive circuit in the sub power PWB.

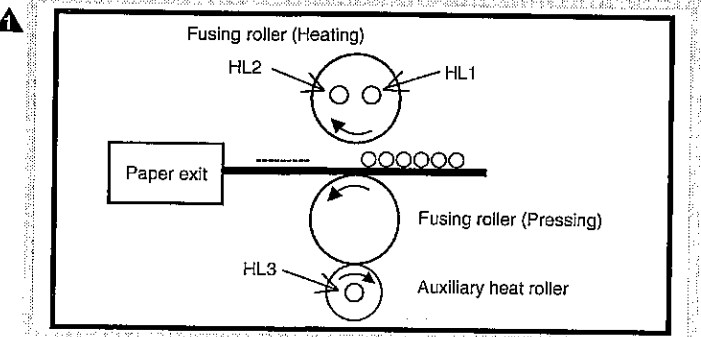
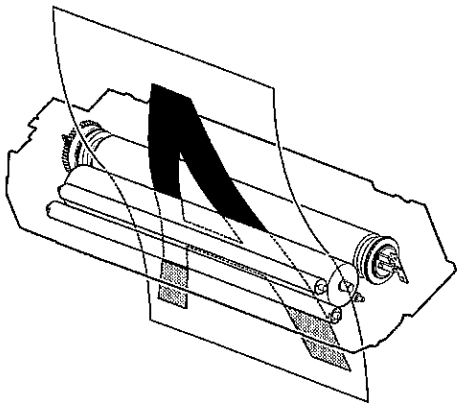
The power triac in the heater lamp drive circuit is turned on, and the AC power is supplied to the heater lamp, lighting the lamp and heating the heat roller.

To prepare for an abnormally high temperature of the heat roller, the thermostat is provided for safety.

When the thermostat is opened, power supply (AC line) to the heater lamp is cut off.

(3) Fusing operation

Toner on paper is heated and pressed to be fused by the heat roller.



Two heater lamps are provided for the fusing heat roller (heating) and one heater lamp is provided for the auxiliary heat roller for the fusing roller (pressing) to heat paper from above and below. This is because toner on paper must be heated from above and below to be fused on paper.

▲ The fusing rollers (pressing) are of silicon rubber because of the following reasons and purpose.

- 1) Paper is separated upward. (Since the fusing roller (heating) is of higher hardness, the fusing roller (pressing) is deformed to separate paper upward.)
- 2) The nip quantity is increased to increase heat capacity for paper.
- 3) By pressing paper with the flexible roller, toner is fused without deformation. (The flatness, however, is not so high.)

(4) Fusing temperature control

The temperature sensor is provided at the center of the fusing roller (heating) and the auxiliary heat roller.

The roller temperature is detected by the installed temperature sensor, and the heater lamp is controlled so that the temperature is maintained at the specified level.

In addition, the fusing temperature is switched according to the kind of paper.

| Mode | Paper | Fusing roller | | Auxiliary heat roller | |
|----------------------------|--------------|-----------------------|---|-----------------------|---|
| | | Inch (U.S.A., Canada) | AB_B (Europe, U.K.) AB_A (Australia) | Inch (U.S.A., Canada) | AB_B (Europe, U.K.) AB_A (Australia) |
| Ready condition print mode | Normal paper | 200°C | 205°C | 200°C | 205°C |
| | Heavy paper | 200°C | 205°C | 200°C | 205°C |
| | Tab paper | 200°C | 205°C | 200°C | 205°C |
| | Postcard | 200°C | 205°C | 200°C | 205°C |
| Pre-heat | — | 170°C | 170°C | 170°C | 170°C |

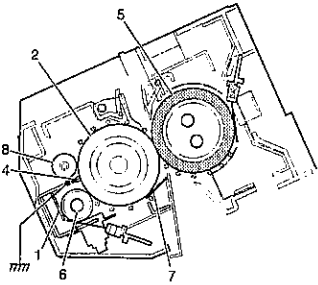
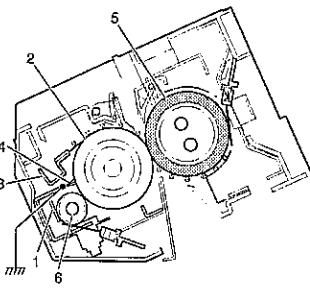
(5) Cleaning operation

The fusing roller removes toner and dusts from the heat roller and the pressure roller surfaces by the following two methods.

- 1. Sub-heat roller (Heating): Clean the sub heat roller with the cleaning sheet.
- 2. Fusing roller (Pressing): Mechanical cleaning by the cleaning scraper (the cleaning plate for the AR-M700N/U)

[AR-M550N/U, AR-M620N/U]

[AR-M700N/U]



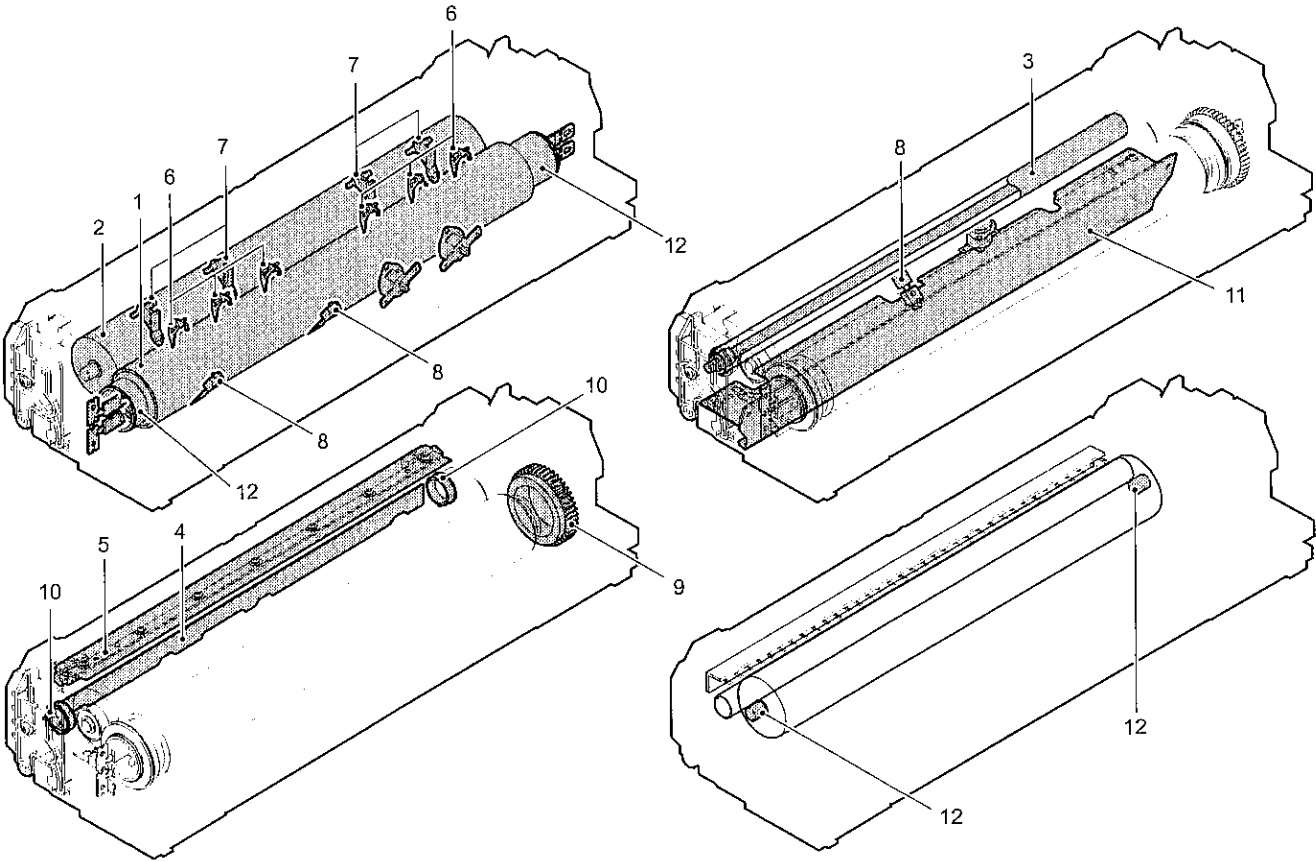
| No. | Name |
|-----|---|
| 1 | Cleaning sheet |
| 2 | Fusing roller (Pressing) |
| 3 | Cleaning scraper (AR-M550N/U, AR-M620N/U) |
| 4 | Discharge brush |
| 5 | Fusing roller (Heating) |
| 6 | Sub-heat roller |
| 7 | Cleaning plate (AR-M700N/U) |
| 8 | Oil roller (AR-M700N/U) |

D. Maintenance and parts replacement

(1) Maintenance list (AR-M550N/U, AR-M620N/U)

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

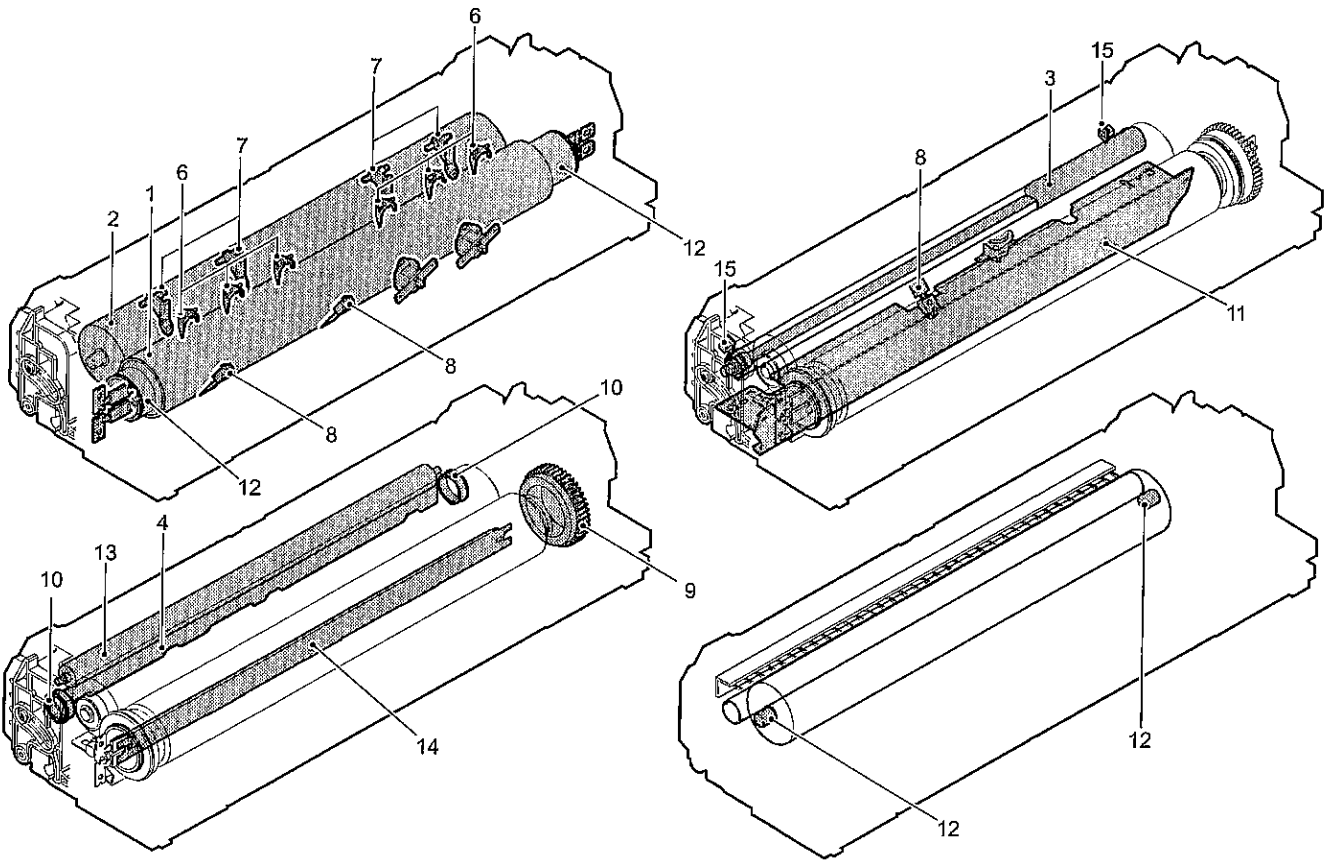
| Unit name | No. | Part name | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|----------------|-----|---------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|---------------------------------|
| | | | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Fusing section | 1 | Heat roller | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 2 | Pressure roller | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | Sub heat roller | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 4 | Cleaning sheet | × | △ | △ | ▲ | △ | △ | △ | △ | △ | |
| | 5 | Fusing cleaning scraper | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 6 | Heat roller separation pawl | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 7 | Pressure roller separation pawl | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 8 | Thermistor | × | × | × | × | × | × | × | × | × | Paper dust removal is required. |
| | 9 | Heat roller gear (Grease) | | × | × | × | × | × | × | × | × | UKOG-0235FCZZ |
| | 10 | Sub heat roller bearing | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 11 | Paper guides | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 12 | Shaft (Grease) | | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | UKOG-0235FCZZ |



(2) Maintenance list (AR-M700N/U)

X: Check (Clean, replace, or adjust as necessary.) O: Clean ▲: Replace Δ: Adjust ☆: Lubricate □: Shift position

| | | AR-M700U/N (PM: 300K) | When calling | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | Remark |
|----------------|-----|---------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|---------------------------------|
| Unit name | No. | Part name | | | | | | | | | | |
| Fusing section | 1 | Heat roller | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 2 | Pressure roller | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | Sub heat roller | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 4 | Cleaning sheet | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 6 | Heat roller separation pawl | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 7 | Pressure roller separation pawl | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 8 | Thermistor | X | X | X | X | X | X | X | X | X | Paper dust removal is required. |
| | 9 | Heat roller gear (Grease) | | X | X | X | X | X | X | X | X | UKOG-0235FCZZ |
| | 10 | Sub heat roller bearing | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 11 | Paper guides | O | O | O | O | O | O | O | O | O | |
| | 12 | Shaft (Grease) | | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | UKOG-0235FCZZ |
| | 13 | Oil roller | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 14 | Cleaning plate | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 15 | CL roller bearing | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |

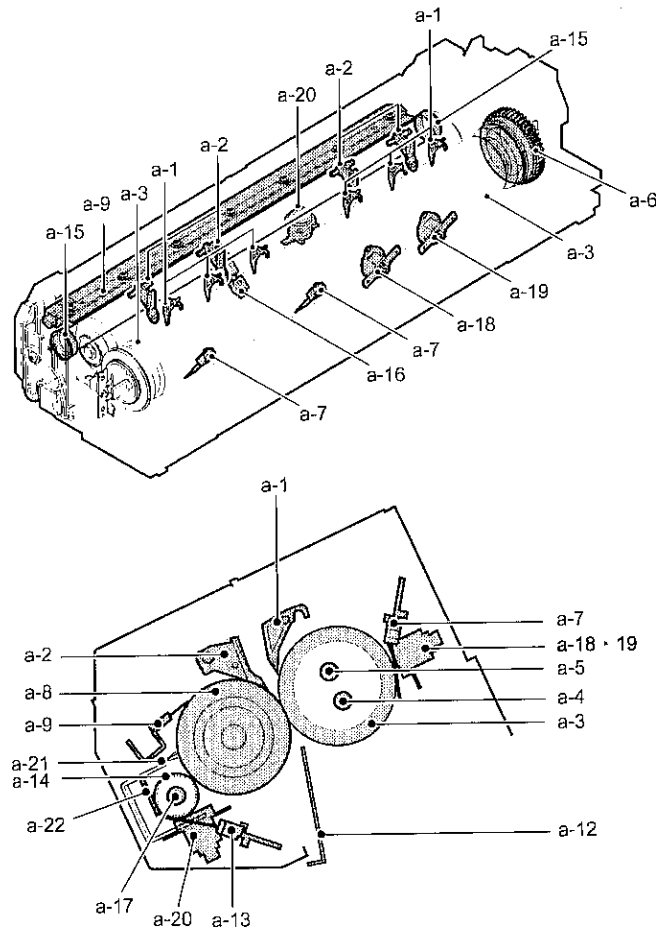


(3) Maintenance and parts replacement

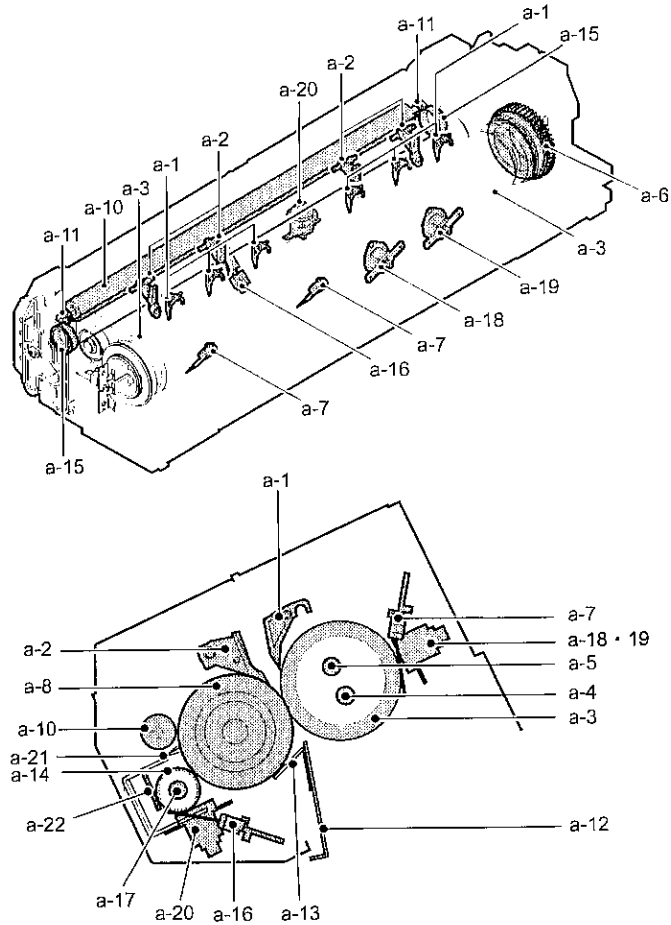
(Replacement parts)

| No. | Unit | Parts | | |
|-----|-------------|-------|--|----|
| a | Fusing unit | 1 | Heat roller separation pawl | ×▲ |
| | | 2 | Pressure roller separation pawl | ×▲ |
| | | 3 | Heat roller | ×▲ |
| | | 4 | Heater lamp 1 | |
| | | 5 | Heater lamp 2 | |
| | | 6 | Heat roller gear | ×▲ |
| | | 7 | Thermistor (upper) | ×▲ |
| | | 8 | Pressure roller | ×▲ |
| | | 9 | Cleaning scraper (AR-M550N/U, AR-M620N/U) | ×▲ |
| | | 10 | Oil roller (AR-M700N/U) | ×▲ |
| | | 11 | CL roller bearing (AR-M700N/U) | ×▲ |
| | | 12 | Paper guide | ○ |
| | | 13 | Cleaning plate (AR-M700N/U) | ×▲ |
| | | 14 | Sub heat roller | ×▲ |
| | | 15 | Sub heat roller bearing | ▲ |
| | | 16 | Thermistor (lower) | ×▲ |
| | | 17 | Sub heater lamp | |
| | | 18 | Thermostat 1 | |
| | | 19 | Thermostat 2 | |
| | | 20 | Thermostat 3 | |
| | | 21 | Discharge brush | ○ |
| | | 22 | Cleaning sheet | ×▲ |

■ AR-M550N/U, AR-M620N/U

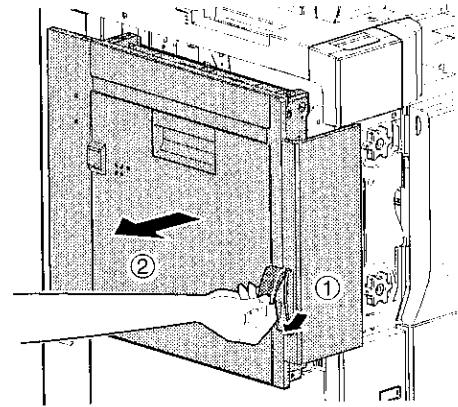


■ AR-M700N/U

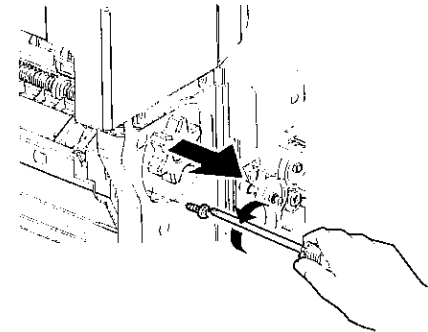


a. Fusing unit

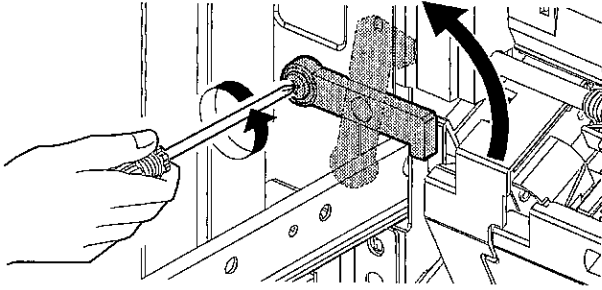
1) Open the left door unit.



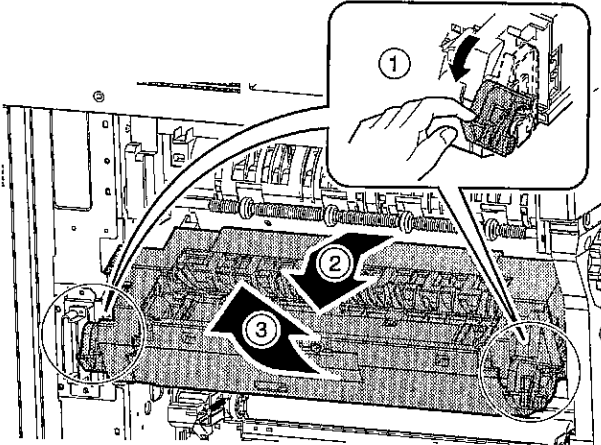
2) Remove the blue fixing screw on the front side.



- 3) Release the fixing members on the rear frame side.



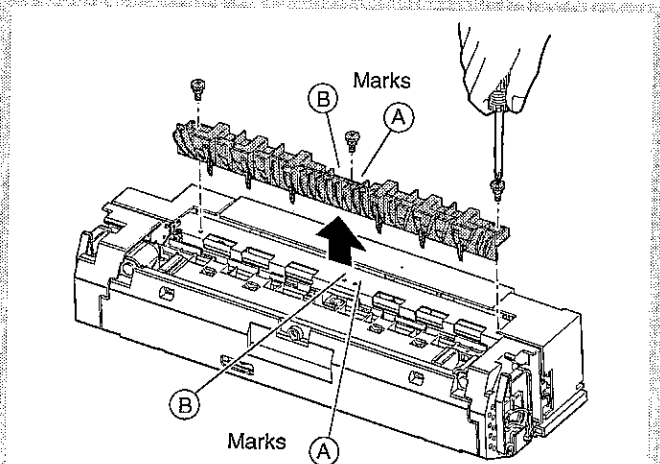
- 4) Release the right and left lock levers of the fusing unit to remove the fusing unit.



- ▲
- Caution for handling at a high temperature (Hold the both sides of the unit.)
 - When removing the unit, be careful not to tilt it, and remove slowly. (This is because the unit includes paper dust scraped by the scraper.)

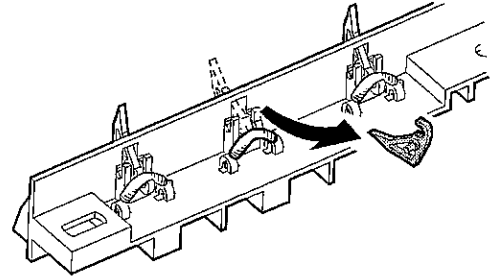
a-1. Heat roller separation pawl

- 1) Remove the fusing unit. (See "a. Fusing unit" in this section)
- 2) Remove the heat roller separation pawl unit.



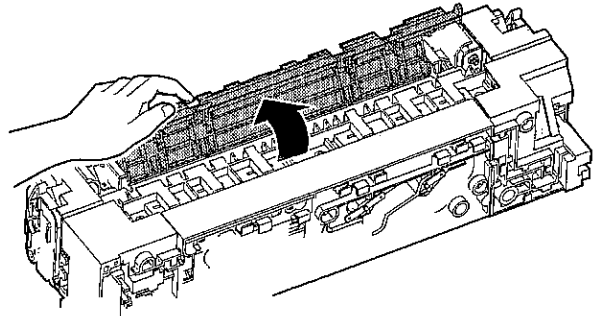
NOTE: When installing the unit, install to the standard position (A). (If the picture quality may be degraded damaged by the roller damage, change the installing position to (B).)

- 3) Remove the heat roller separation pawl.

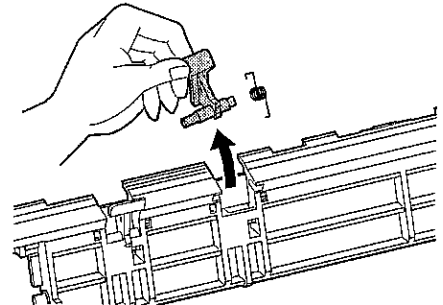


a-2. Pressure roller separation pawl

- 1) Remove the fusing unit. (See "a. Fusing unit" in this section)
- 2) Open the pressure roller separation pawl unit.



- 3) Remove the pressure roller separation pawl.



a-3. Heat roller

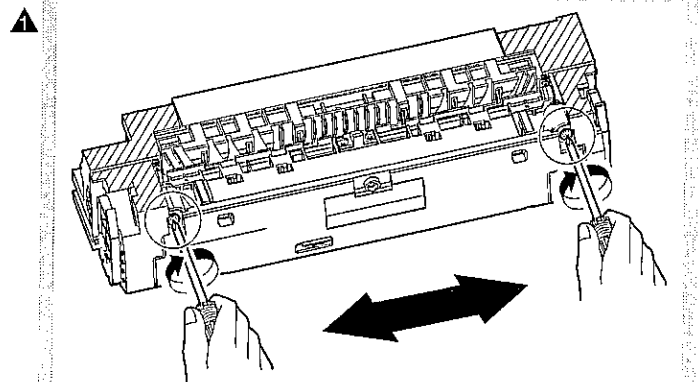
a-4. Heater lamp 1

a-5. Heater lamp 2

a-6. Heat roller gear

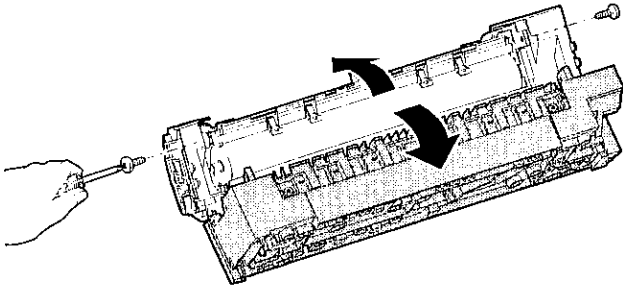
a-7. Thermistor (upper)

- 1) Remove the fusing unit. (See "a. Fusing unit" in this section)
- 2) Alternately tighten the screws to release pressure.

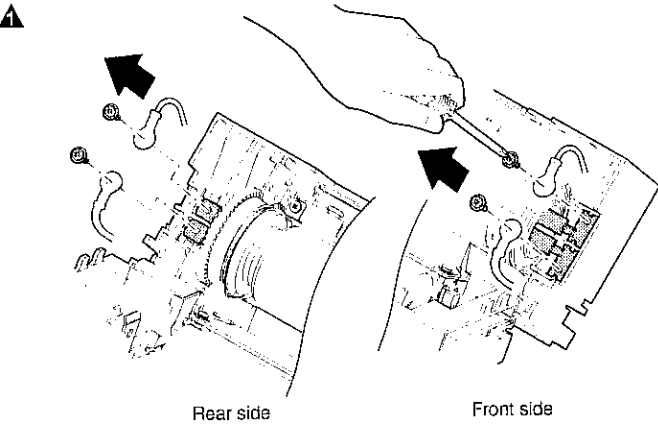


NOTE: When tightening the screws and releasing the pressure, do not apply any force to the shaded area. (Otherwise, the PG on the paper entry side may be deformed.)

- ▲ 3) Remove the screws to open the fusing unit.

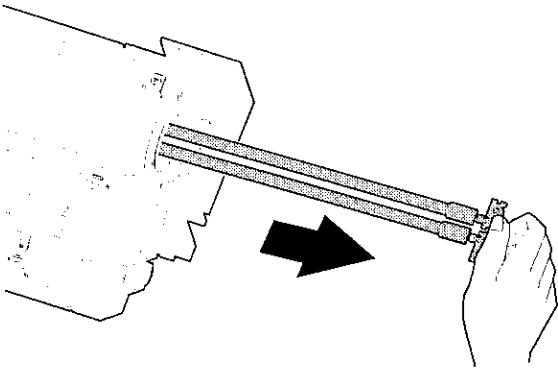


- 4) Remove the lamp fixing screw.

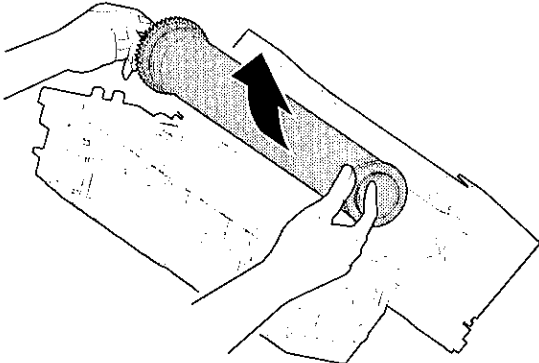


- When assembling, tighten the screws in the front side (drawer CN side) and then in the rear side (gear side) in this sequence.
- Check that the screw is securely tightened again. (If the screw is loose, the contact becomes defective to cause an overcurrent and overheating.)

- 5) Remove the heater lamp 1 and 2.

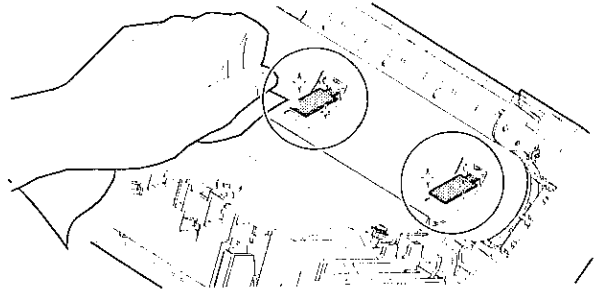


- 6) Remove the heat roller unit.

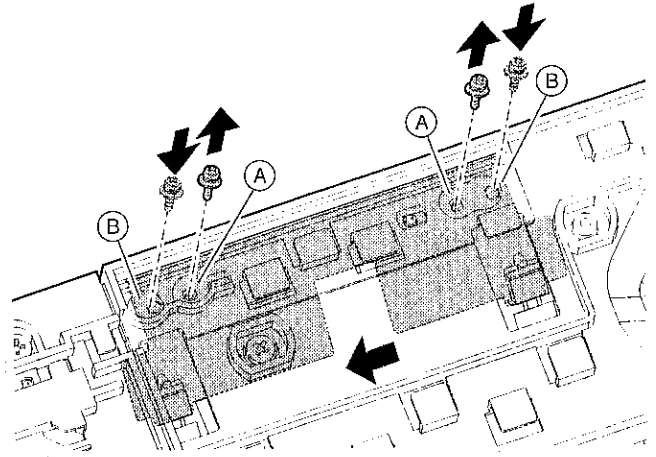


- 7) Clean the upper thermistor.

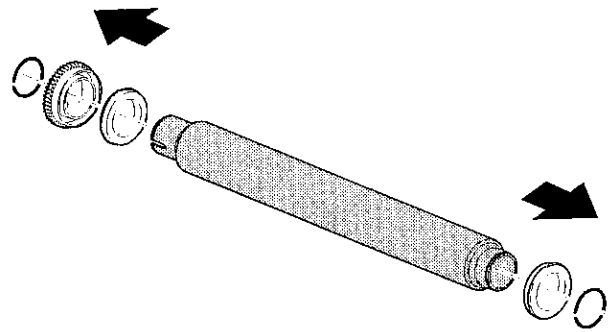
- ▲ NOTE: Be careful of deformation of the plate spring of the thermistor.



- ▲ NOTE: The thermistor position can be changed by shifting the thermistor mounting plate. (If the picture quality may be degraded damaged by the roller damage, change the installing position to (B).)

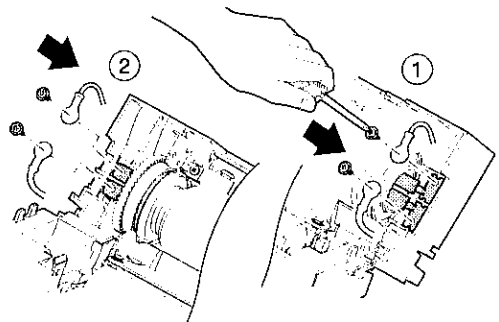


- 8) Remove the ring to remove the gear bearing.



[Caution when Attaching]

- Affix the lamp fixing screw from the opposite side of the drive.

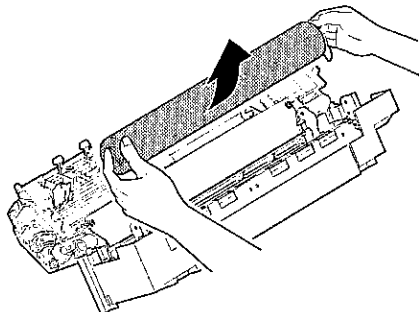


a-8. Pressure roller

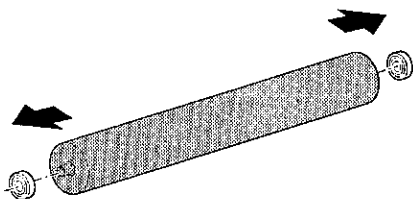
- 1) Remove the fusing unit. (See "a. Fusing unit" in this section)
- 2) Release the pressure. (See "a-4. Heater lamp 1" in this section)

▲ 3) Remove the screw to open the fusing unit.

- 4) Remove the fusing roller (pressing) unit.

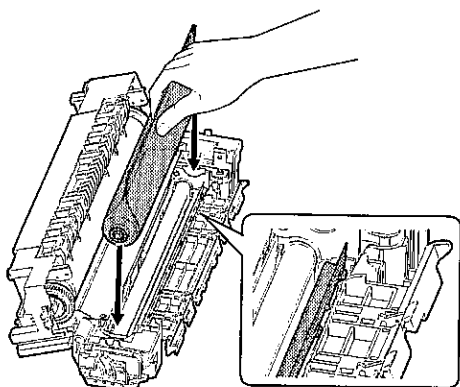


- 5) Remove the bearing from the fusing roller (pressing).

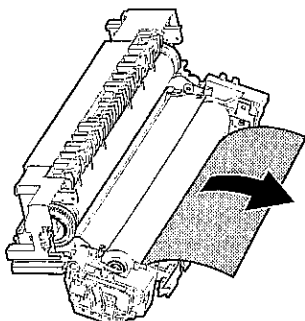


[Note for assembly (AR-M550N/U, AR-M620N/U)]

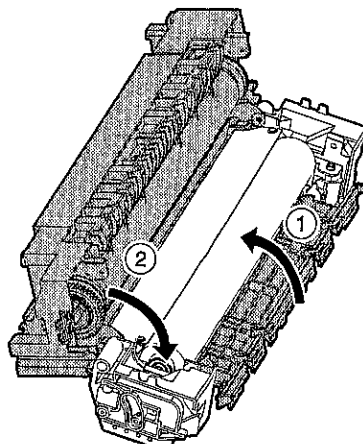
- Wind paper with the scraper tip without scratching the pressure roller, and insert it.
- When inserting, be careful not to deform the scraper.
- ▲ When replacing the pressure roller or the scraper, they must be replaced together. (This note should be observed within the maintenance cycle.)
- When assembling the used pressure roller to the original position, set it in the original direction (F-R direction). If it is set in the reverse direction, it may not fit with the scraper, resulting in insufficient cleaning. If, however, the pressure roller and the scraper are replaced together with new one, there is no need to consider this note.



- Engage the bearings F/R with the pressure lever concaves and pull out the paper from the scraper side.



- When closing the unit, first close the upper unit from the above in order to prevent against deform of the scraper.



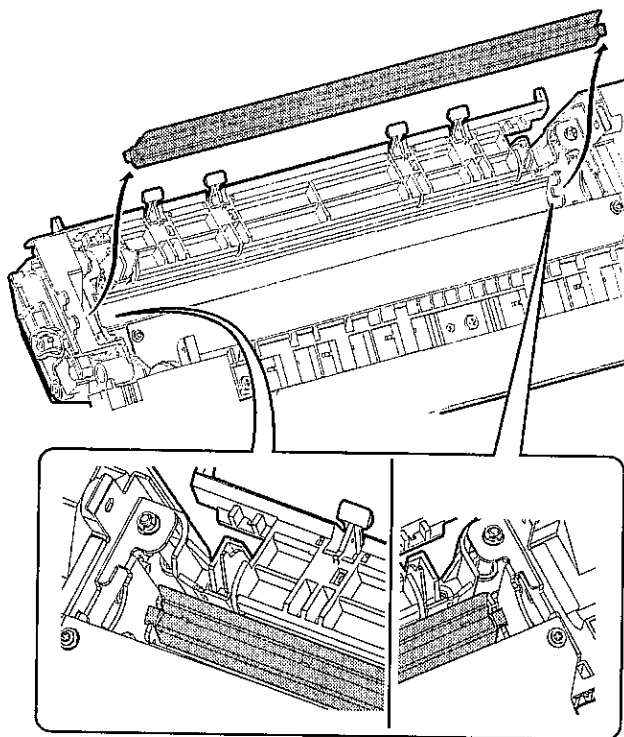
▲ NOTE: Avoid rattling of the pressure roller and the scraper. If not, the scraper may be deformed and the pressure roller may be damaged.

[Note for installation (AR-M700N/U)]

- When installing the pressure roller to the fusing unit, be careful not to damage the cleaning blade. If the cleaning plate would be deformed, copy dirt would be resulted.

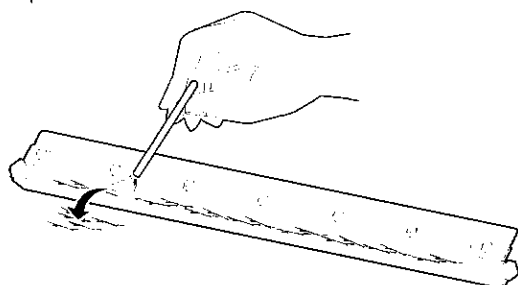
a-9. Cleaning scraper (AR-M550N/U, AR-M620N/U)

- 1) Remove the fusing unit. (See "a. Fusing unit" in this section)
- 2) Open the fusing unit.
- 3) Remove the pressure roller unit.
- 4) Remove the fusing cleaning scraper.



[Cleaning]

- Clean and remove paper dust and toner remained in the concave of the scraper holder.



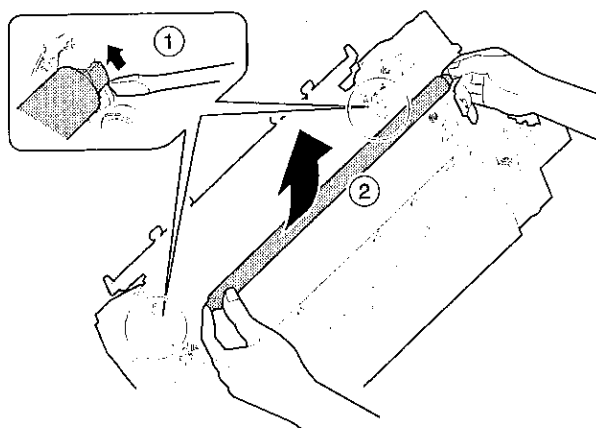
▲ NOTE:

- When replacing the scraper, replace the whole scraper unit. In addition, when replacing the scraper, the pressure roller must be also replaced.
- Do not remove paper dust from the edge of the scraper. If paper dust is forcibly removed, uneven contact occurs between the pressure roller and the scraper, resulting in insufficient cleaning.

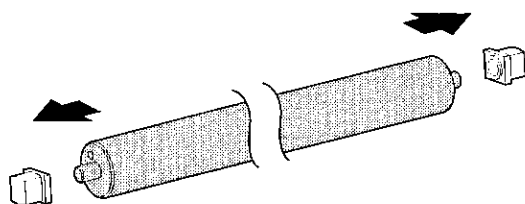
▲ a-10. Oil roller (AR-M700N/U)

a-11. CL roller bearing (AR-M700N/U)

- 1) Remove the fusing unit. (See "a. Fusing unit" in this section)
- 2) Open the fusing unit. (See "a-3. Heat roller" in this section)
- 3) Remove the pressure roller unit. (See "a-8. Pressure roller" in this section)
- 4) Remove the oil roller unit.



- 5) Remove the CL roller bearings from the oil roller.

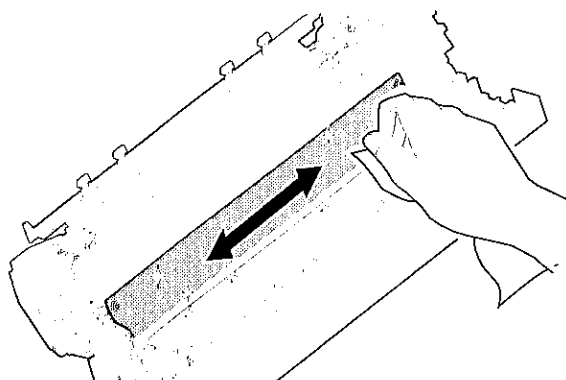


NOTE: When installing the oil roller, set so that "R" mark and "↑" mark are on the rear side of the unit.

NOTE: When handling the oil roller, be careful not to deform or damage the rubber section. When cleaning the oil roller, do not rub forcibly in order not to break the surface tube or the internal rubber.

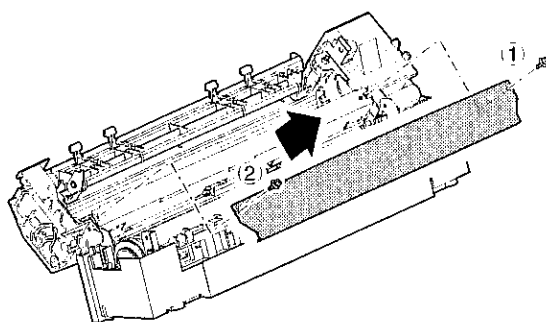
a-12. Paper guide

- 1) Remove the fusing unit. (See "a. Fusing unit" in this section)
- 2) Release the pressure. (See "a-4. Heater lamp 1" in this section)
- ▲ 3) Remove the screw to open the fusing unit.
- 4) Clean the paper guide.



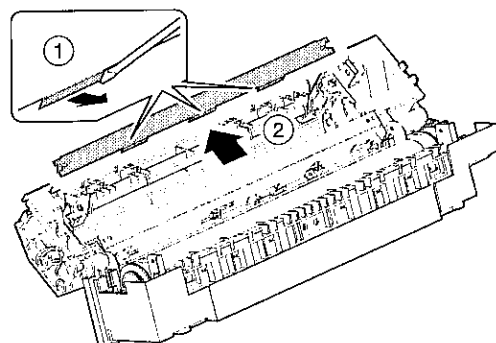
▲ a-13. Cleaning plate (AR-M700N/U)

- 1) Remove the fusing unit. (See "a. Fusing unit" in this section)
- 2) Open the fusing unit. (See "a-3. Heat roller" in this section)
- 3) Remove the pressure roller unit. (See "a-8. Pressure roller" in this section)
- 4) Remove the paper guide.



NOTE:

- Tighten the screws in the sequence shown above.
- Do not allow clearance at the center of the paper guide.
- If copy dirt is heavy, replace it.
- Clean and remove paper dust from the cleaning roller plate and its surrounding.
- Do not remove toner and paper dust from the mesh section of the cleaning plate. If they are removed forcibly, the cleaning plate may be deformed, resulting in insufficient cleaning.
- 5) Remove the cleaning roller plate.



[Note for installation]

- Be careful not to deform the cleaning plate. If the cleaning plate would be deformed, insufficient cleaning would be resulted.

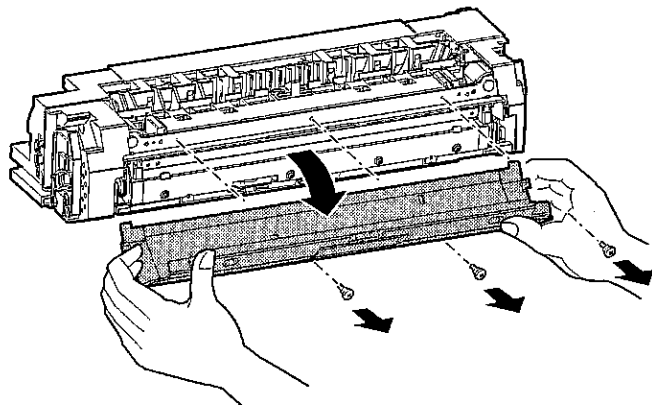
a-14. Sub heat roller

a-15. Sub heat roller bearing

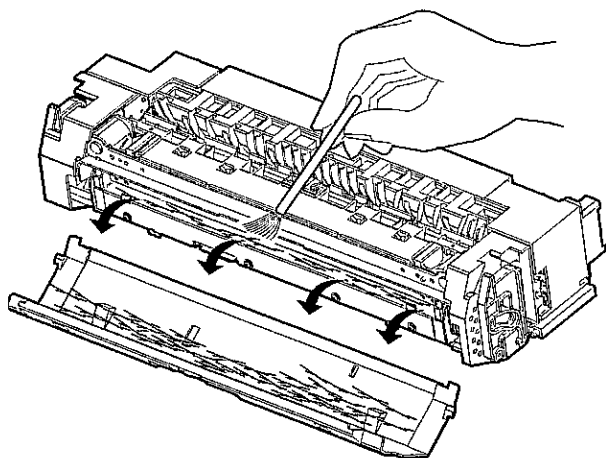
a-16. Thermistor (lower)

a-17. Sub heater lamp

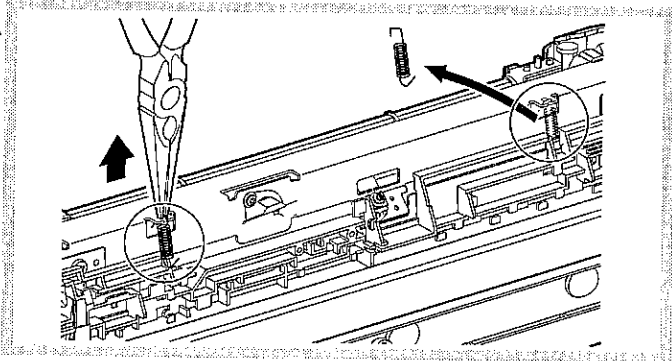
- 1) Remove the fusing unit. (See "a. Fusing unit" in this section)
- 2) Release the pressure. (See "a-4. Heater lamp 1" in this section)
- 3) Lay the unit on its side to prevent paper dust from dispersing, and remove the lower cover.



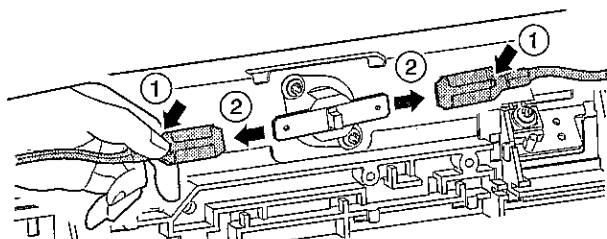
4) Clean paper dust.



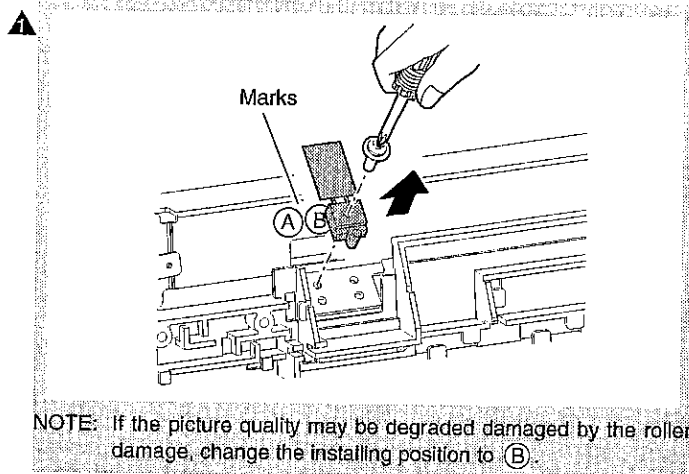
5) Remove the spring.



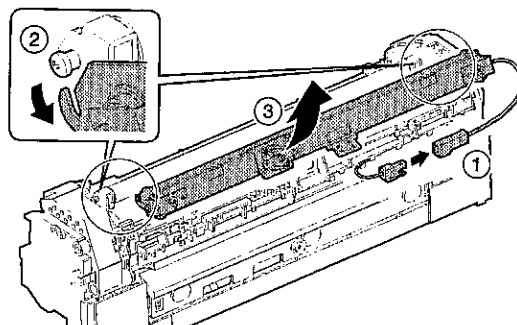
6) Remove the thermostat terminals.



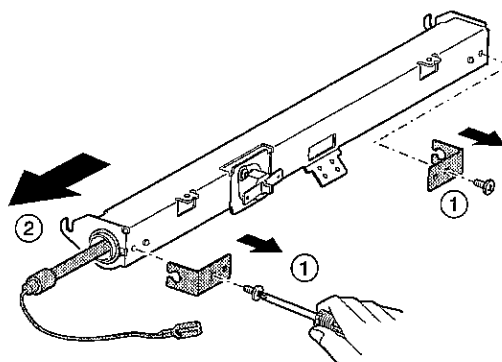
7) Remove the thermistor.



8) Remove the sub heat roller unit.

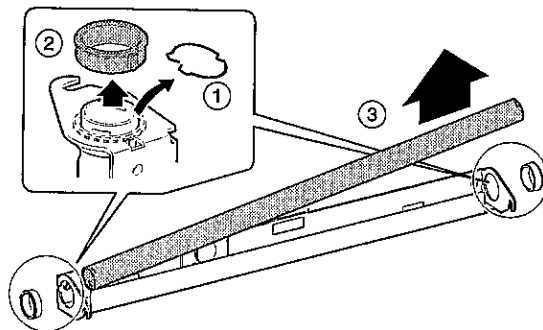


9) Remove the lamp fixture.



10) Remove the sub heater lamp.

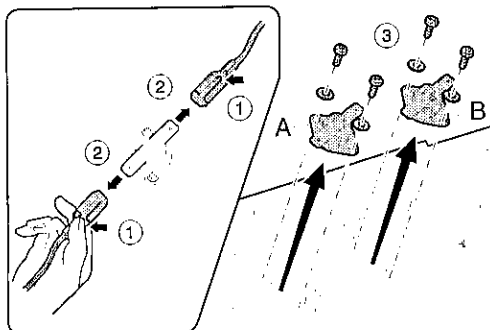
11) Remove the ring, and remove the second heater roller bearing and the second heater roller.



a-18. Thermostat 1

a-19. Thermostat 2

- 1) Remove the fusing unit. (See "a. Fusing unit" in this section)
- 2) Remove the thermostat 1 (A) and the thermostat 2 (B).



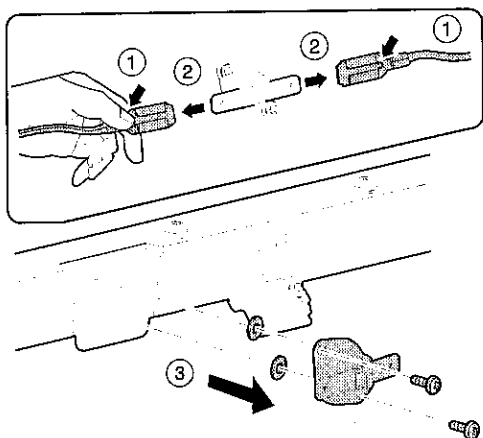
[Cleaning]

When there is paper dust or foreign material on the heat sensitive surface of the thermostat, clean and remove dust or foreign material.

NOTE: Be careful not to mistake the install position of the washer.

a-20. Thermistor 3

- 1) Remove the fusing unit. (See "a. Fusing unit" in this section)
- 2) Remove the heating unit.
- 3) Remove the thermostat 3.



[Cleaning]

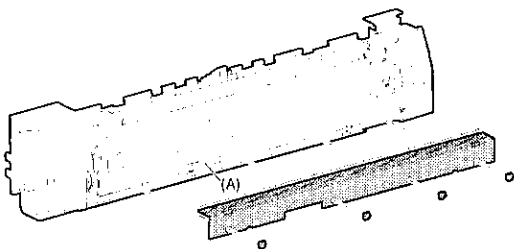
When there is paper dust or foreign material on the heat sensitive surface of the thermostat, clean and remove dust or foreign material.

NOTE: Be careful not to mistake the install position of the washer.

▲ a-21. Discharge brush

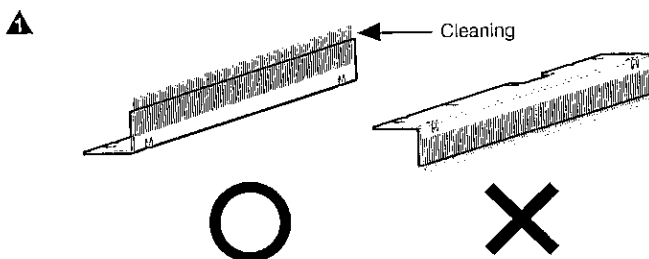
a-22. Cleaning sheet

- 1) Remove the fusing unit. (See "a. Fusing unit" in this section)
- 2) Lay the unit on its side to prevent paper dust from dispersing, and remove the lower cover. (See "a-14. Sub heat roller" in this section)
- 3) Clean paper dust. (See "a-14. Sub heat roller" in this section)
- 4) Remove the second heating roller cleaning holding plate.



NOTE: When there are paper dusts or foreign materials at the port area (A), clean and remove.

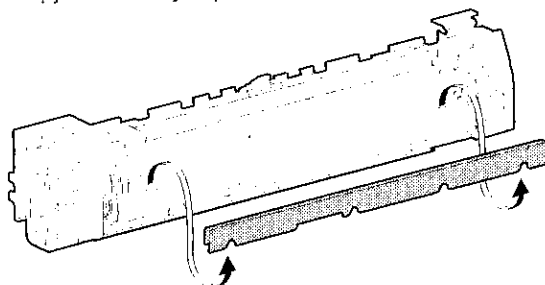
- 5) Do not lay the unit with the discharge brush on the lower side.



NOTE: Clean and remove paper dust. (Be careful not to deform the brush.)

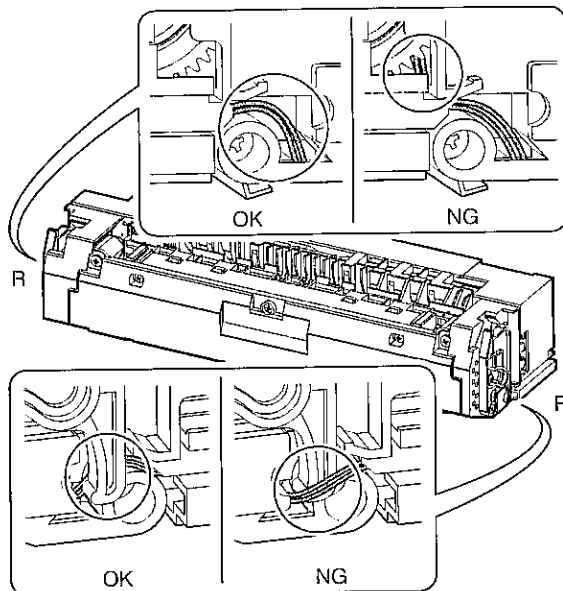
- 6) Remove the cleaning sheet.

- If the roller is cooled down, toner may be hardened to prevent removing.
- Since cleaning is performed by applying a pressure by the spring, be careful not to deform it.
- If copy dirt is heavy, replace the cleaning sheet with a new one.



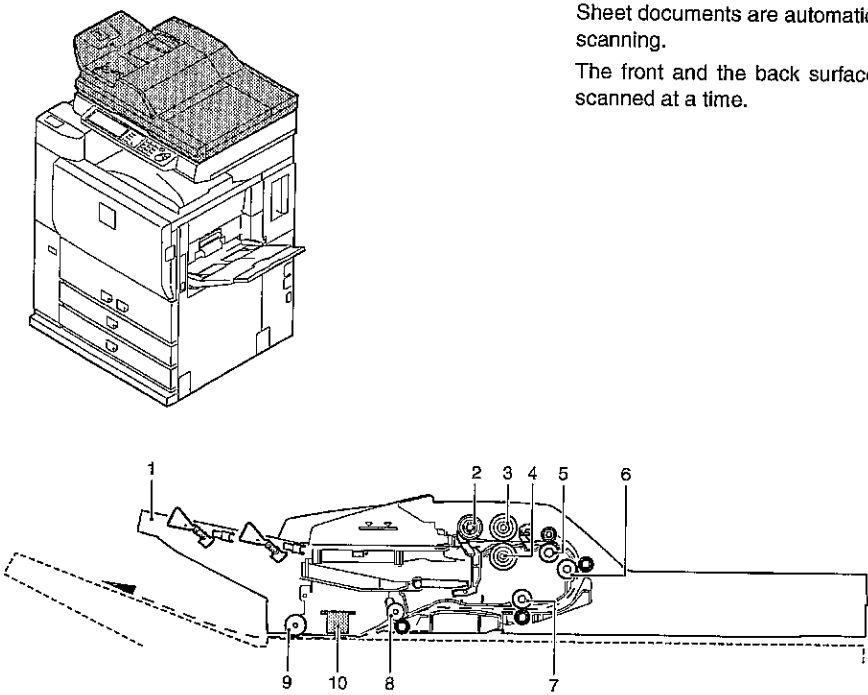
(CAUTION) Note for assembly of the fusing unit

- ▲ Check that the harnesses on the hinge section (F frame side and R frame side) which connects the upper and the lower frames are in the normal state as shown below.



- If the harness on the F side extends out from the frame, repair it correctly.
- Arrange wiring as shown above so that the harness slack on the rear side does not extend to the gear side or does not come too closely to the gear.

7. SPF section



A. General

Sheet documents are automatically fed and transported for continuous scanning.
The front and the back surfaces of duplex sheet documents can be scanned at a time.

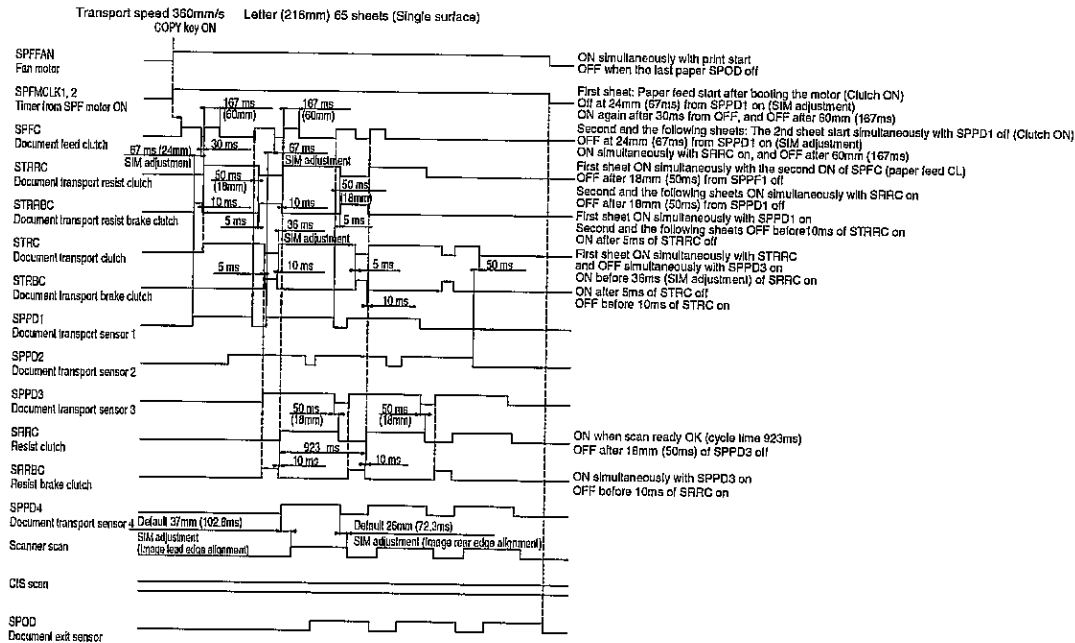
| No. | Name | Function |
|-----|----------------------------|---|
| 1 | Document tray | Paper feed tray for documents. Max. loading capacity of documents: 150 sheets (80g/m ²) or 19.5mm or less |
| 2 | Pickup roller | Picks up a document and transports it to the document feed roller. |
| 3 | Document feed roller | Feeds documents. |
| 4 | Separation roller | Separates paper to prevent against double feed. |
| 5 | No. 1 resist roller | Performs document feed resist. |
| 6 | Transport roller 1 (Drive) | Transports documents. |
| 7 | Transport roller 2 (Drive) | Transports documents. |
| 8 | No. 2 resist roller | Makes synchronization between the document lead edge and the scan start position. |
| 9 | Paper exit roller (Drive) | Discharges documents. |
| 10 | CIS unit | Scans the back surface of a document. |

B. Operational descriptions

(1) Timing chart

To increase the document replacement speed, preliminary feed is performed for the second and the following documents when two or more documents of A4/Letter size or smaller are scanned.
For this purpose, each transport roller is provided with a clutch to perform independent control.

In addition, an electromagnetic brake is employed for each transport roller because it reduces the motor load when compared with the mechanical brake.



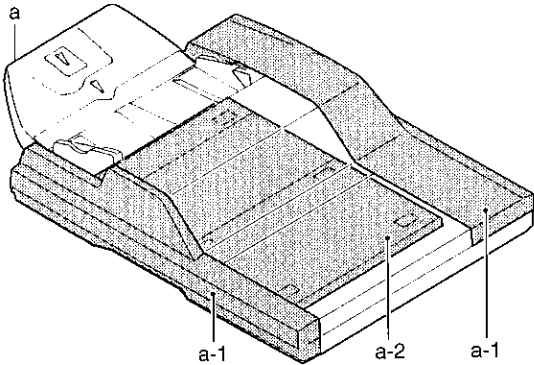
[External outfit section]

A. Maintenance and parts replacement

(1) Maintenance and parts replacement

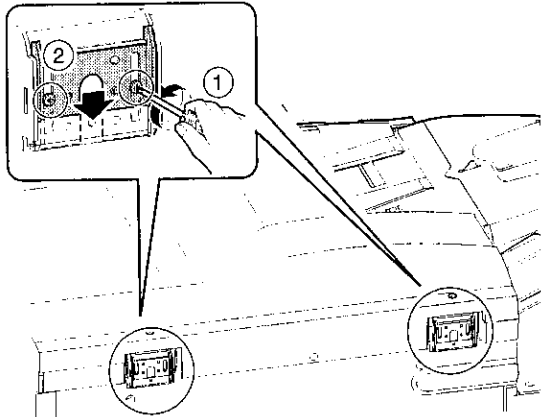
(Replacement parts)

| No. | Unit | Parts | |
|-----|----------|-------|--------------|
| a | SPF unit | 1 | Cabinet |
| | | 2 | Document mat |

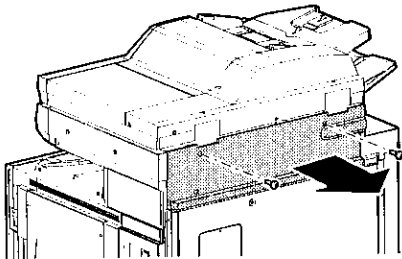


a. SPF unit

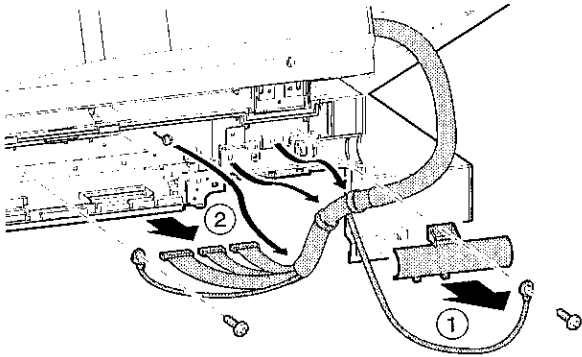
1) Push down the fixing plate.



2) Remove the rear cover.

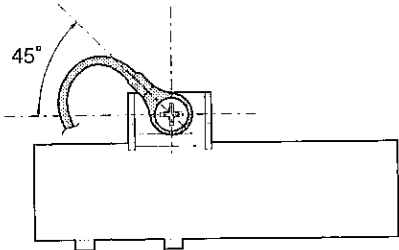


3) Remove the harness.

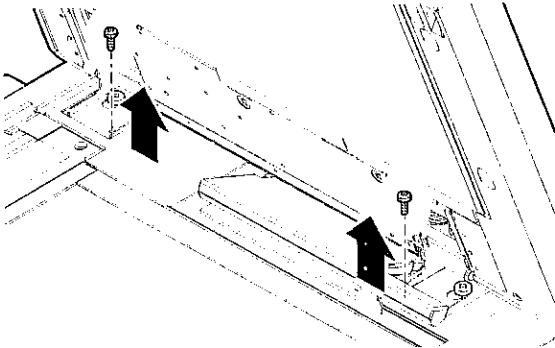


[Note for assembly]

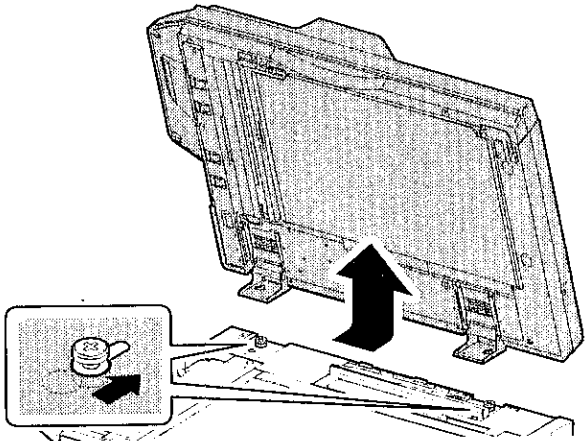
Install the earth terminal in the direction shown in the figure below.



4) Remove the fixing screw.

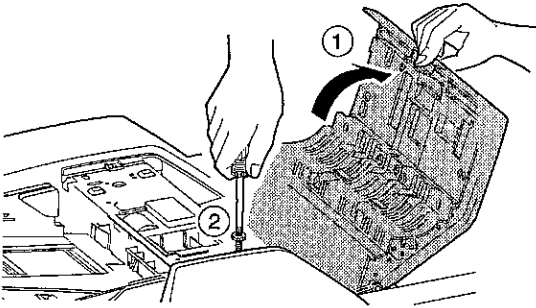


5) Remove the SPF.

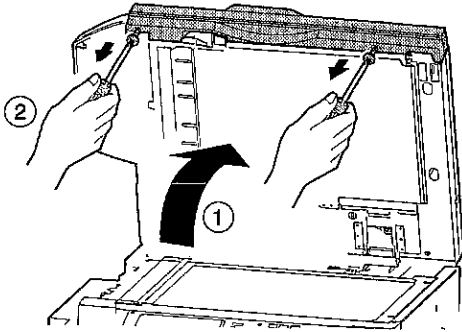


a-1. Cabinet

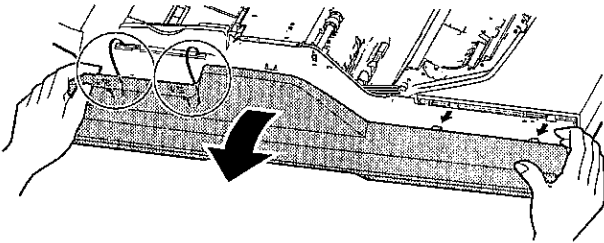
- 1) Open the cover and remove the screws.



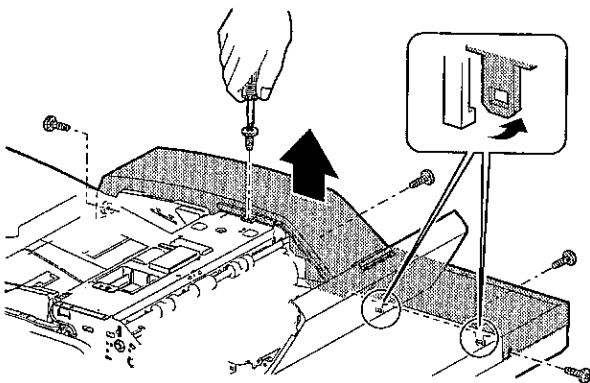
- 2) Open the SPF and remove the screws.



- 3) Unhook the claws on the tray side to remove the front cover.

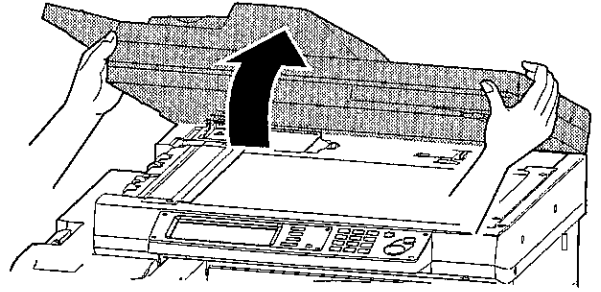


- 4) Remove the rear cover.

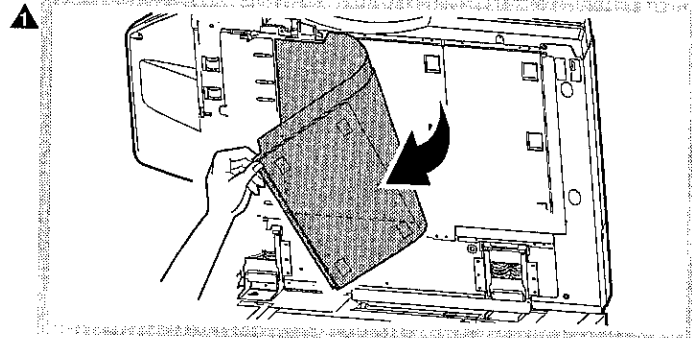


a-2. Document mat

- 1) Open the SPF.

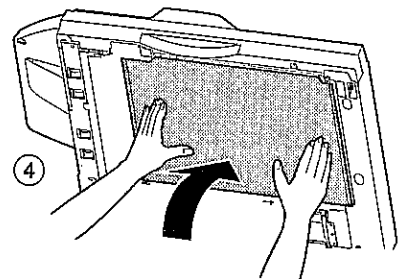
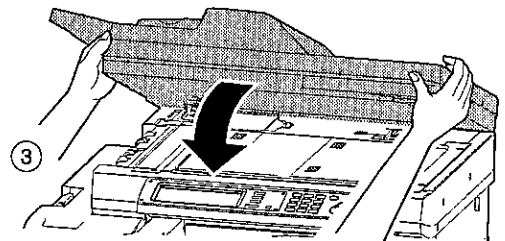
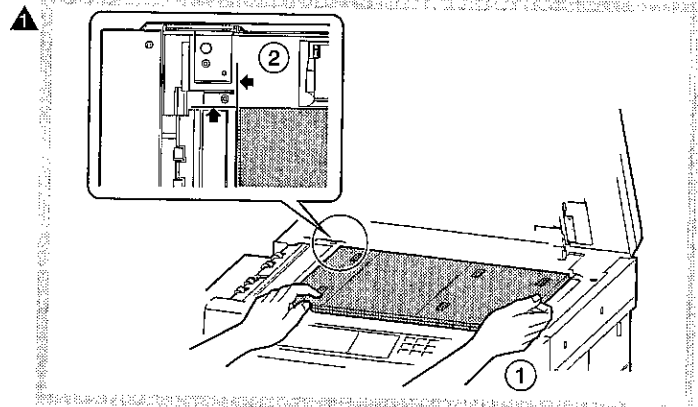


- 2) Remove the mat.



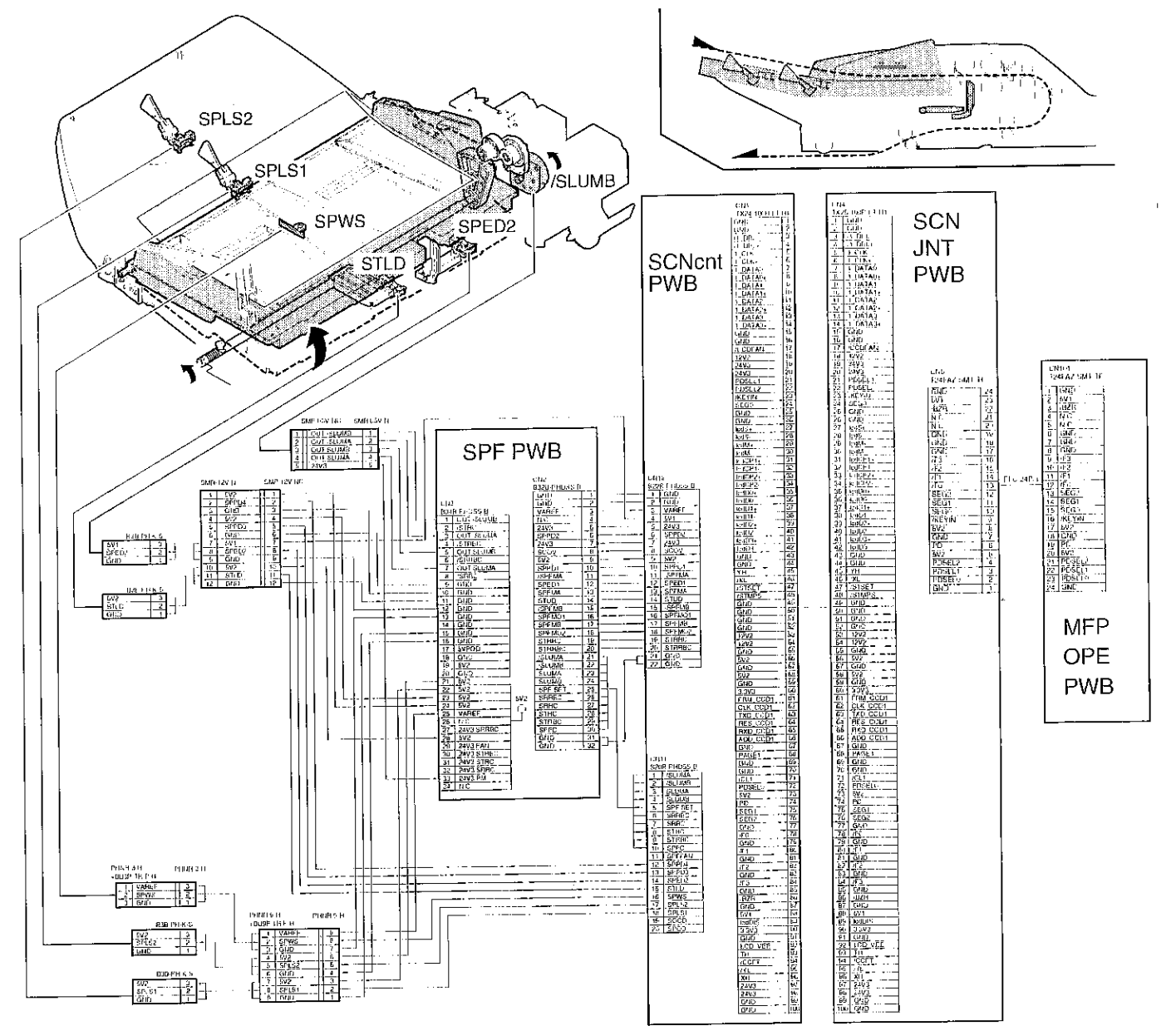
Caution when attaching

- Place the mat on the document base glass surface; close the SPF to attach the mat; then open again and apply pressure by hand to attach.



[Paper feed tray section]

A. Major parts and signal functions



| Code | Signal name | Name | Function/Operation | Type | Model | Note |
|--------|-------------|--|--|-------------------|-------|----------------|
| SPED2 | SPED2 | SPF document empty detector | SPF document empty detection | Transmission type | | Sensor |
| SPLS1 | SPLS1 | SPF document length detector 1 | SPF document length detection (Short) | Transmission type | | Sensor |
| SPLS2 | SPLS2 | SPF document length detector 2 | SPF document length detection (Long) | Transmission type | | Sensor |
| SPWS | SPWS | SPF document size (Width) detection analog data detector | SPF document size (Width) detection | Volume resistor | | Other detector |
| STLD | STLD | SPF document tray lower limit detector | SPF document tray lower limit detection | Transmission type | | Sensor |
| /SLUMB | /SLUMB | SPF paper tray lift motor | Lifts up and down the SPF paper feed tray. | Stepping motor | | |

B. Operational descriptions

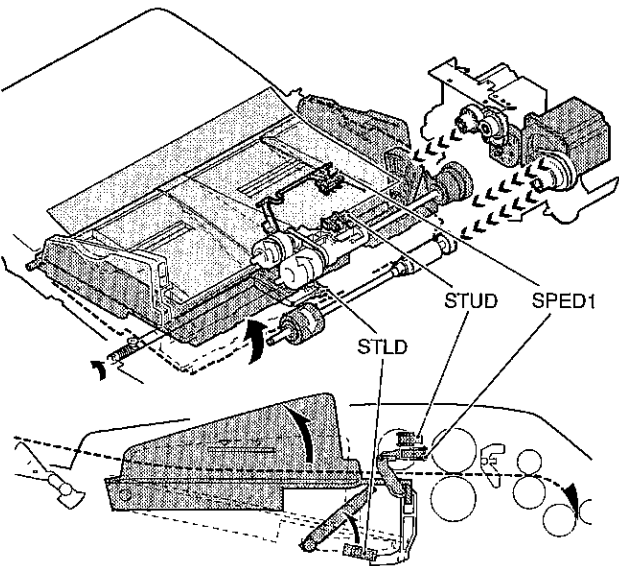
(1) Document tray lift operation

When a job is started, the document tray is lifted until a document at the top in the document tray turns on the document upper limit sensor (STUD).

The pressure between the document at the top in the document tray and the take-up roller is maintained at a constant level to improve the paper feed capability.

When paper to be scanned is exhausted, the document empty sensor (SPED1) turns off and the document tray moves down automatically until the lower limit sensor detects it.

Up and down movements of the document tray are performed by the lift motor (normal rotation, reverse rotation) and the lift gear.

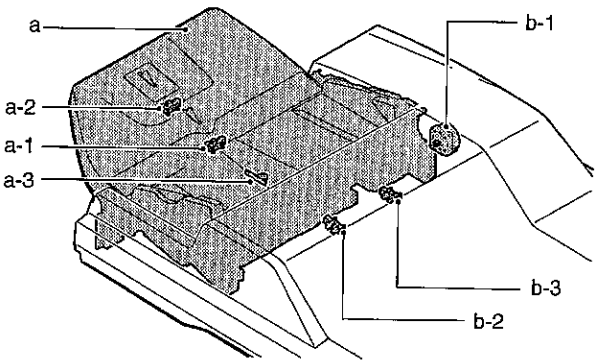


C. Maintenance and parts replacement

(1) Maintenance and parts replacement

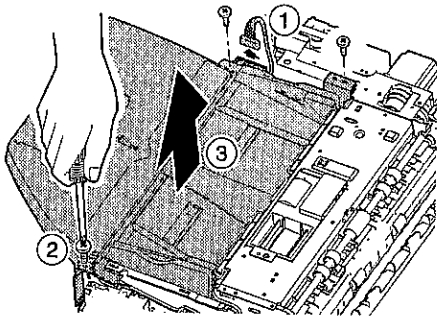
(Replacement parts)

| No. | Unit | Parts |
|-----|--------------------|--|
| a | Document tray unit | 1 SPF document length detector 1 |
| | | 2 SPF document length detector 2 |
| | | 3 SPF document size (width) detection analog data detector |
| b | | 1 SPF paper tray lift motor |
| | | 2 SPF paper tray lower limit detector |
| | | 3 SPF document empty detector |



a. Document tray unit

- 1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Disconnect the connector, and remove the document tray unit.

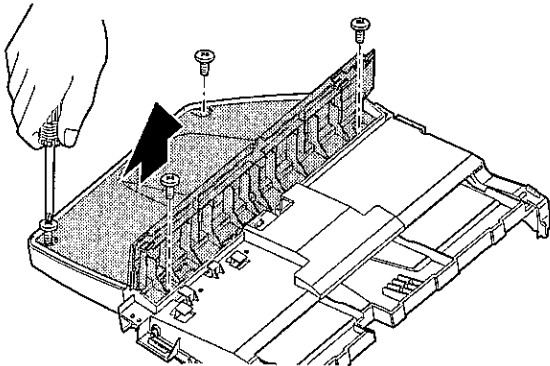


a-1. SPF document length detector 1

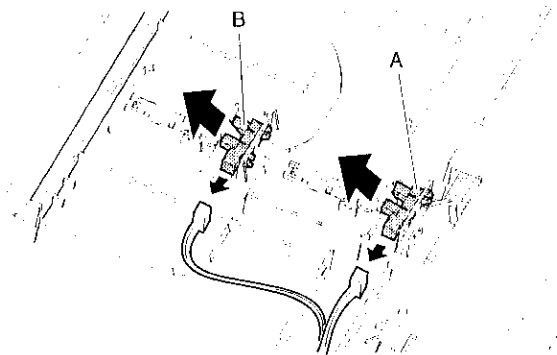
a-2. SPF document length detector 2

a-3. SPF document size (width) detection analog data detector

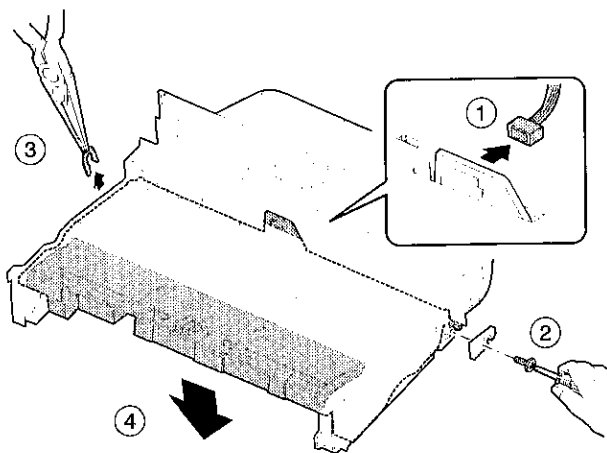
- 1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Remove the document tray unit. (See "a. Document tray unit" in this section)
- 3) Remove the screw, and remove the cover.



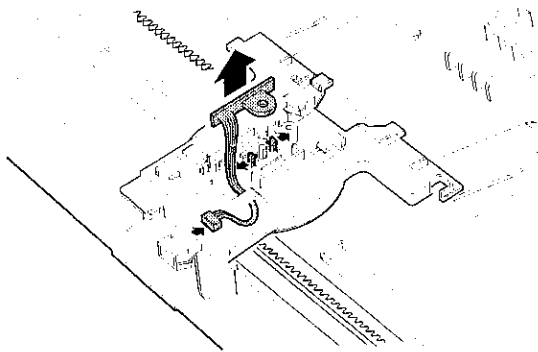
- 4) Disconnect the connector, and remove the SPF document length detector 1 (A) and the SPF document length detector 2 (B).



- 5) Remove the rotation tray unit.

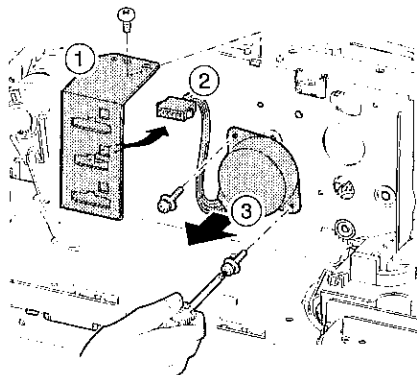


- 6) Remove the SPF document size (width) detection analog data detector.



b-1. SPF paper tray lift motor

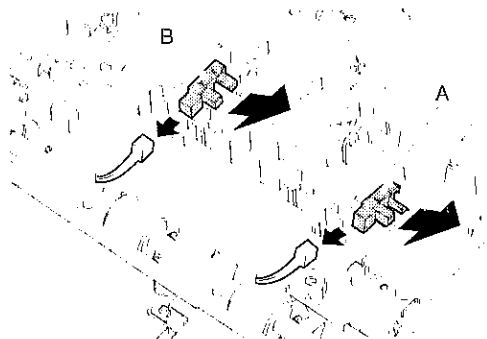
- 1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Remove the SPF paper tray lift motor.



b-2. SPF paper tray lower limit detector

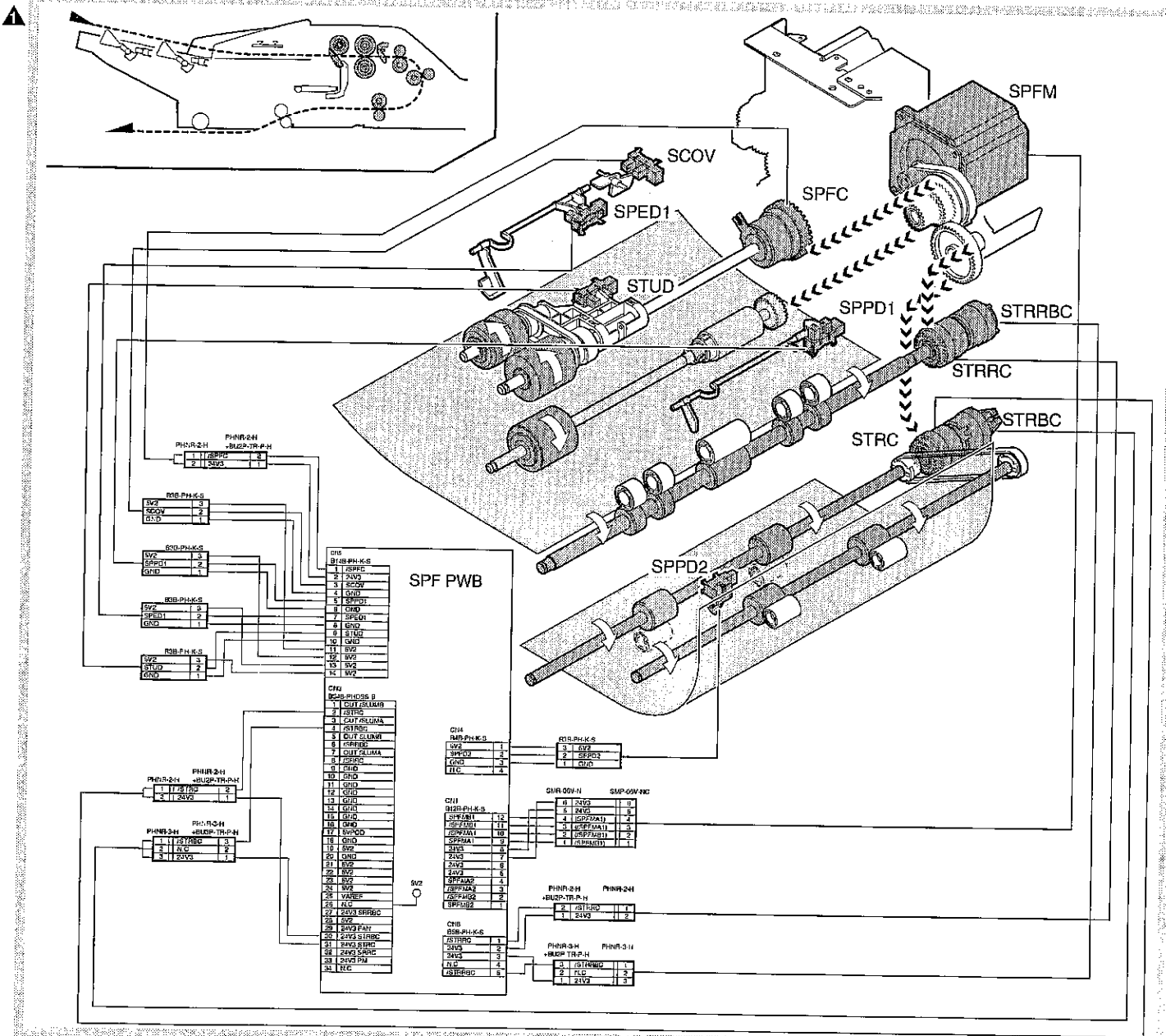
b-3. SPF document empty detector

- 1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Remove the document tray unit. (See "a. Document tray unit" in this section)
- 3) Disconnect the connector, and remove the SPF paper tray lower limit detector (A) and the SPF document empty detector (B).



[Paper feed/transport section]

A. Major parts and signal functions



| Code | Signal name | Name | Function/Operation | Type | Model | Note |
|--------|-------------|---|--|------------------------|-------|--------|
| SCOV | SCOV | SPF cover switch | SPF cover open/close detection | Transmission type | | Sensor |
| SPFM | SPFM1 | SPF paper feed motor, paper transport motor | Drives the paper feed roller and the transport roller. (SPF) | Stepping motor | | |
| SPFC | SPFC | SPF paper feed clutch | SPF paper feed section roller ON/OFF control | Electromagnetic clutch | | |
| STRRC | STRRC | SPF NO.1 resist roller clutch | SPF resist roller ON/OFF control | Electromagnetic clutch | | |
| STRRBC | STRRBC | SPF No. 1 resist roller brake clutch | SPF resist roller braking | Electromagnetic clutch | | |
| STRC | STRC | SPF paper transport roller 2 clutch | SPF transport roller 2 ON/OFF control | Electromagnetic clutch | | |
| STRBC | STRBC | SPF paper transport roller 2 brake clutch | SPF transport roller 2 braking | Electromagnetic clutch | | |
| SPED1 | SPED1 | SPF document upper limit detector | SPF document upper limit detection | Transmission type | | Sensor |
| SPPD1 | SPPD1 | SPF document paper pass detector 1 | SPF document paper pass detection 1 | Transmission type | | Sensor |
| SPPD2 | SPPD2 | SPF document paper pass detector 2 | SPF document paper pass detection 2 | Transmission type | | Sensor |
| STUD | STUD | SPF document tray upper limit detector | SPF document tray upper limit detection | Transmission type | | Sensor |

B. Operational descriptions

(1) Document feed, transport, scan, paper exit, and operating speed

The document fed by the take-up roller is sent through the paper feed roller and the transport roller to the resist roller section.

In the resist roller section, the document lead edge and the scan start position are synchronized. The document is transported to the scan section. After being scanned, the document discharged to the document exit tray by the paper exit roller.

The document transport speed varies depending on the scan mode and the scan magnification ratio as shown below.

| Scan mode | Magnification ratio | Document transport speed |
|---------------------|---------------------|--------------------------|
| Single surface scan | Up to 117% | 360mm/sec |
| Single surface scan | 118% or above | 220mm/sec |
| Duplex scan | Up to 100% | 220mm/sec |
| Duplex scan | 101% or above | 110mm/sec |

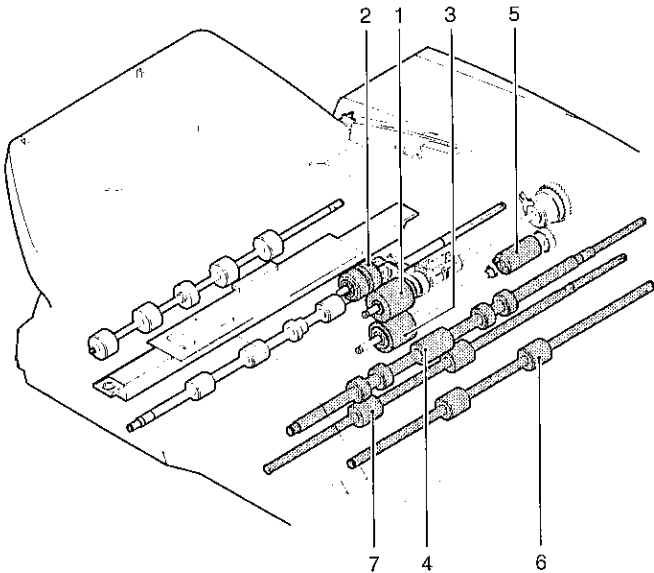
C. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| | | AR-M550U/N (PM: 250K) | | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|-----------|---------------------------------|-----------------------------------|---------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|----------|
| | | AR-M620U/N, AR-M700U/N (PM: 300k) | | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Unit name | | No. | Part name | | | | | | | | | | |
| SPF | Document feed/transport section | 1 | Document feed roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | | 2 | Paper pickup roller (SPF) | × | × | × | × | × | × | × | × | × | (Note 1) |
| | | 3 | Separation roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | | 4 | No. 1 resist roller | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | 5 | Torque limiter | | × | × | × | × | × | × | × | × | (Note 1) |
| | | 6 | Transport roller 1 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | 7 | Transport roller 2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

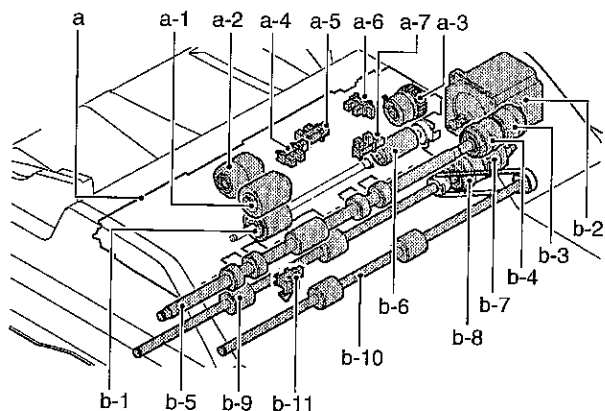
(Note 1) Replacement reference: For replacement, refer to each paper feed port counter value.
DSPF section: 100K or 1 year



(2) Maintenance and parts replacement

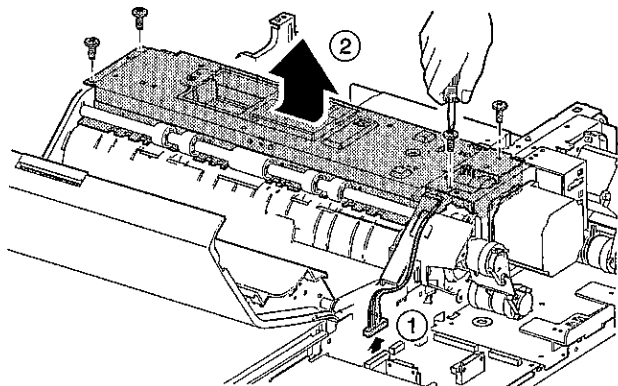
(Replacement parts)

| No. | Unit | Parts | |
|-----|-----------------|---|---|
| ▲ a | Paper feed unit | 1 Document feed roller | × |
| | | 2 Pickup roller | × |
| | | 3 SPF paper feed clutch | |
| | | 4 SPF document tray upper limit detector | |
| | | 5 SPF document upper limit detector | |
| | | 6 SPF cover switch | |
| | | 7 SPF document paper pass detector 1 | |
| ▲ b | | 1 Separation roller | × |
| | | 2 SPF paper feed/paper transport motor | |
| | | 3 SPF resist roller brake clutch | |
| | | 4 SPF resist roller clutch | |
| | | 5 No. 1 resist roller (Drive) | ○ |
| | | 6 Torque limiter | × |
| | | 7 SPF paper transport roller 2 brake clutch | |
| | | 8 SPF paper transport roller 2 clutch | |
| | | 9 Transfer roller 2 (Drive) | ○ |
| | | 10 Transport roller 1 (Drive) | ○ |
| | | 11 SPF document paper pass detector 2 | |



a. Paper feed unit

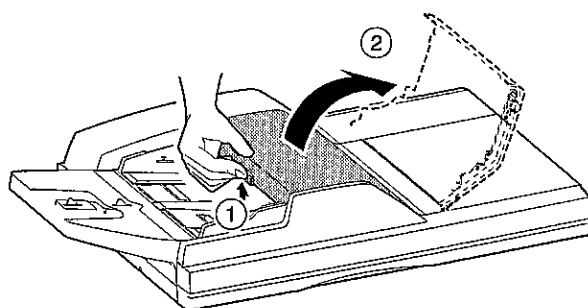
- 1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Disconnect the connector, and remove the paper feed unit.



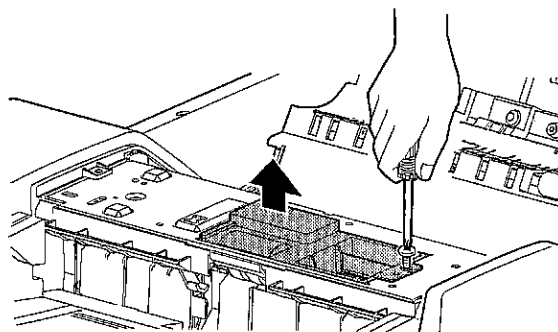
a-1. Paper feed roller

a-2. Pickup roller

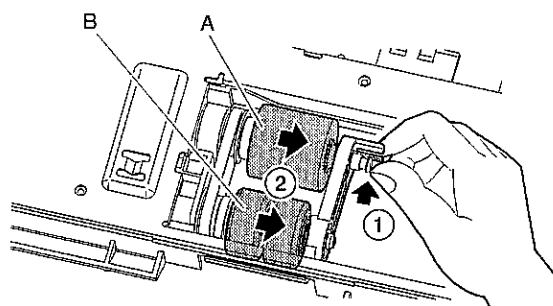
- 1) Pull up the lever and open the upper cover.



- 2) Remove the roller cover.



- 3) Remove the pawl and remove the rollers.



a-3. SPF paper feed clutch

a-4. SPF document tray upper limit detector

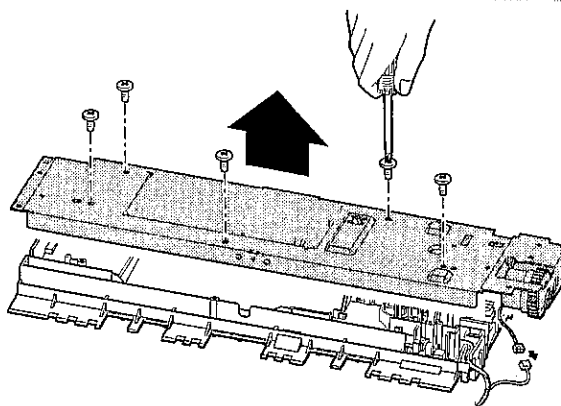
a-5. SPF document upper limit detector

a-6. SPF cover switch

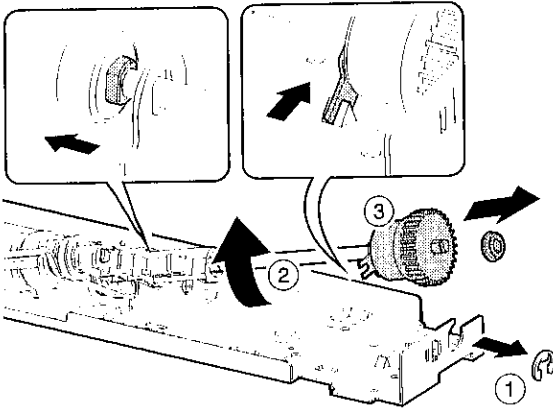
a-7. SPF document paper pass detector 1

- 1) Remove the cabinet. (See "a-2. Document mat" in the previous section, "[External outfit section]")
- 2) Remove the document feed tray unit. (See "a. Paper feed unit" in this section)

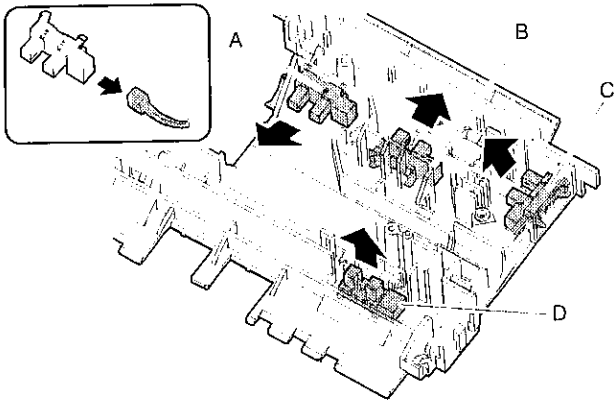
- ▲ 3) Remove the cover and disconnect the connector.



- 4) Remove the E-ring, and remove the SPF paper feed clutch.

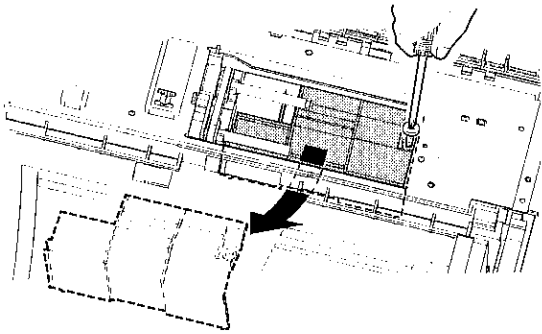


- 5) Disconnect the connector, and remove the SPF document tray upper limit detector (A), the SPF document upper limit detector (B), the SPF cover switch (C), and the SPF document paper pass detector 1 (D).

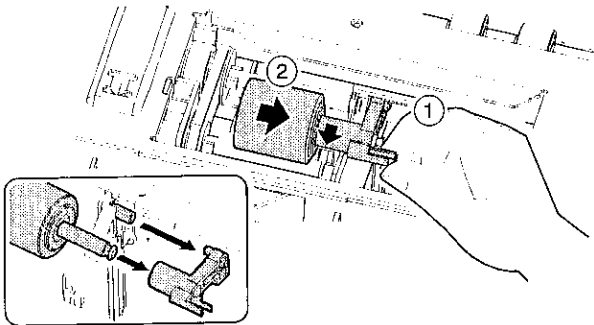


b-1. Separation roller

- 1) Remove the paper feed roller and the pickup roller. ("a-1. Paper feed roller" and "a-2. Pickup roller" in this section.)
- 2) Remove the cover.



- 3) Unhook the claw to remove the support. Remove the reverse roller.

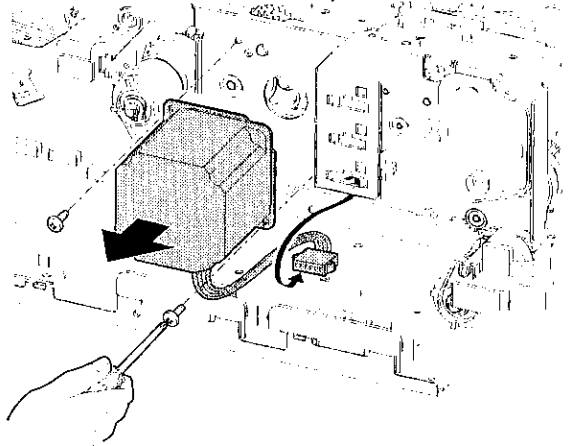


[Caution when attaching]

- Rotate the roller into the pin slot.

b-2. SPF paper feed/paper transport motor

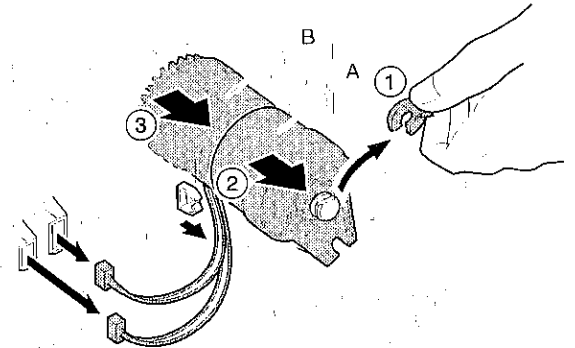
- 1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Remove the SPF paper feed/paper transport motor.



b-3. SPF resist roller brake clutch

b-4. SPF resist roller clutch

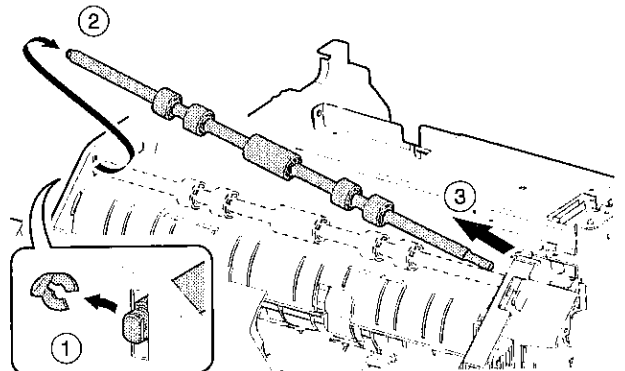
- 1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- ▲ 2) Disconnect the connector, and remove the clamp, the plastic E-ring, the SPF resist roller brake clutch (A), and the SPF resist roller clutch (B).



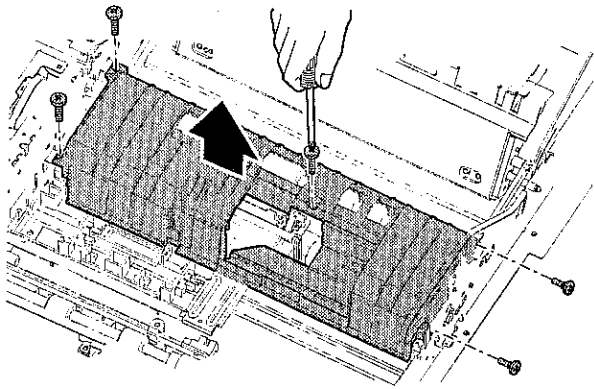
b-5. No. 1 resist roller (Drive)

b-6. Torque limiter

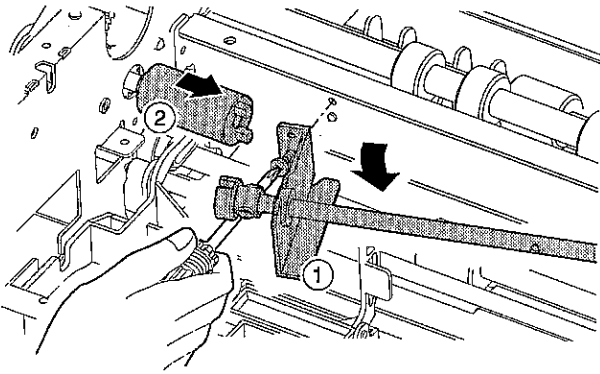
- 1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Remove the document feed tray unit. (See "a. Paper feed unit" in this section)
- 3) Remove the plastic E-ring in the arrow direction and remove the No. 1 resist roller idle.



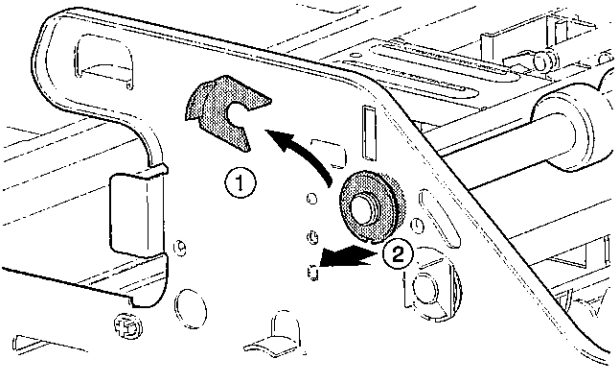
- 4) Remove the separation roller. (Refer to "b-1. Separation roller" in this section.)
- 5) Remove the paper feed paper guide lower unit in the arrow direction.



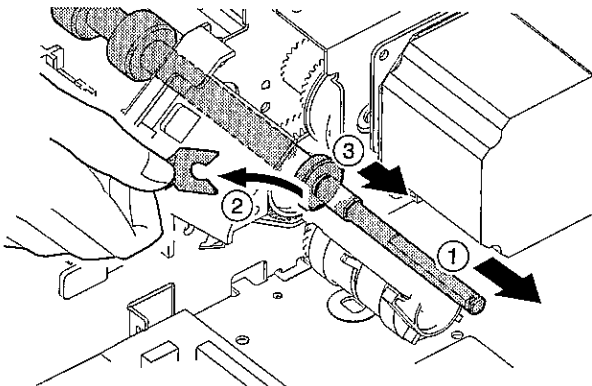
- 6) Remove the bearing metal fixture, and remove the torque limiter.



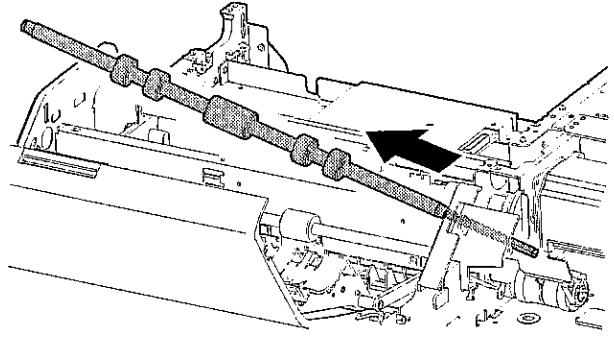
- 7) Remove the electromagnetic clutch. (See "b-3. SPF resist roller brake clutch" in this section)
- 8) Remove the plastic E-ring to remove the bearing.



- 9) Slide the No. 1 resist roller drive in the arrow direction, and remove the plastic E-ring.



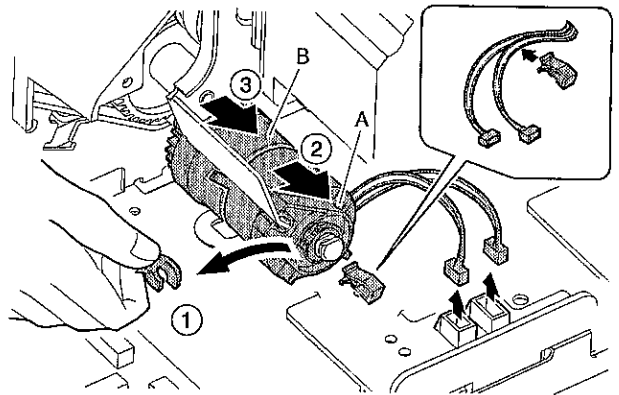
- 10) Remove the No. 1 resist roller drive in the arrow direction.



b-7. SPF paper transport roller 2 brake clutch

b-8. SPF paper transport roller 2 clutch

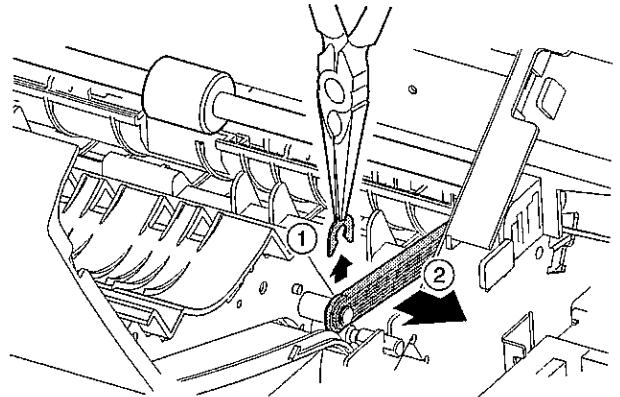
- 1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Disconnect the connector, and remove the plastic E-ring, the SPF paper transport roller 2 brake clutch (A), and the SPF paper transport roller 2 clutch (B).



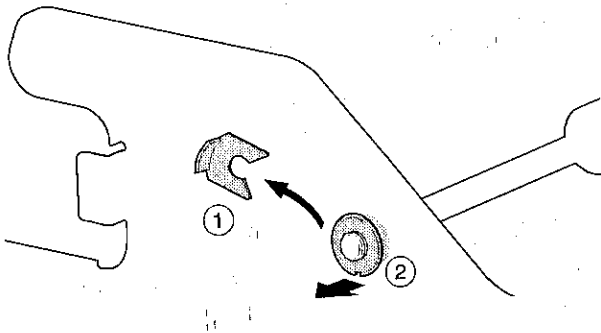
b-9. Transport roller 2 (Drive)

b-10. Transport roller 1 (Drive)

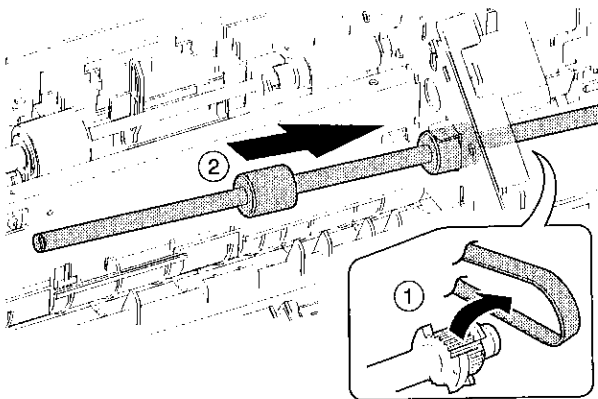
- 1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Remove the document feed tray unit. (See "a. Paper feed unit" in this section)
- 3) Remove the No. 1 resist roller idle and the paper feed paper guide lower unit. (See "b-5. No. 1 resist roller (Drive)" in this section)
- 4) Remove the plastic E-ring on the cover side to remove the link lever.



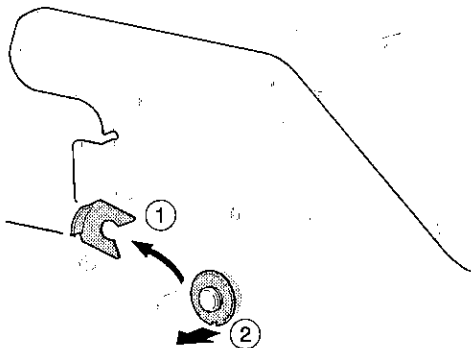
3) Remove the plastic E-ring to remove the bearing.



6) Remove the belt, and remove the transport roller 1 in the arrowed direction.

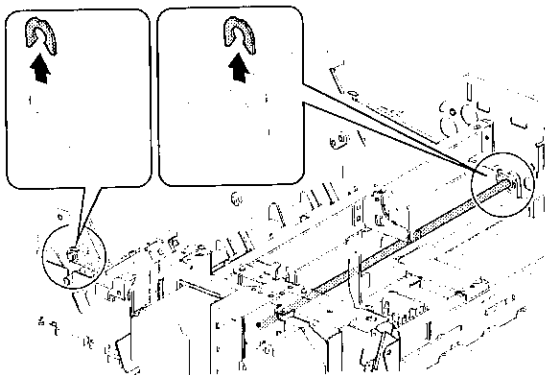


7) Remove the plastic E-ring to remove the bearing.

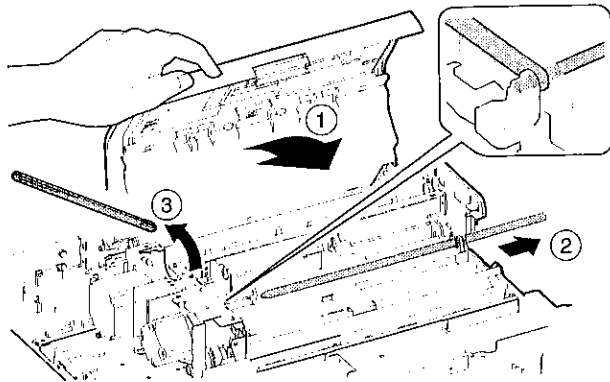


8) Remove the electromagnetic clutch. (See "b-7. SPF paper transport roller 2 brake clutch" and "b-8. SPF paper transport roller 2 clutch" in this section.)

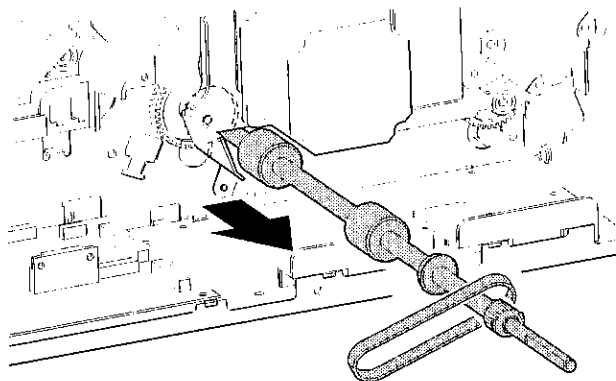
9) Remove the plastic E-rings on the shaft side.



10) Remove the lever and shaft.

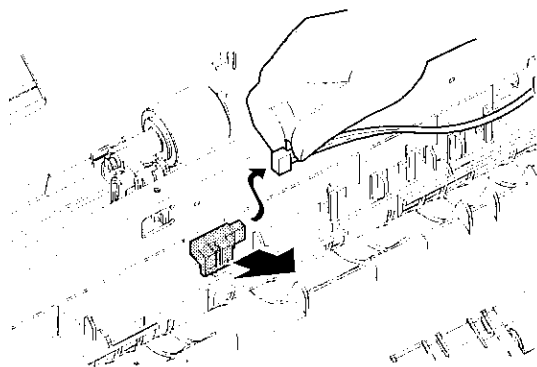


11) Remove the transport roller 2 in the arrowed direction.



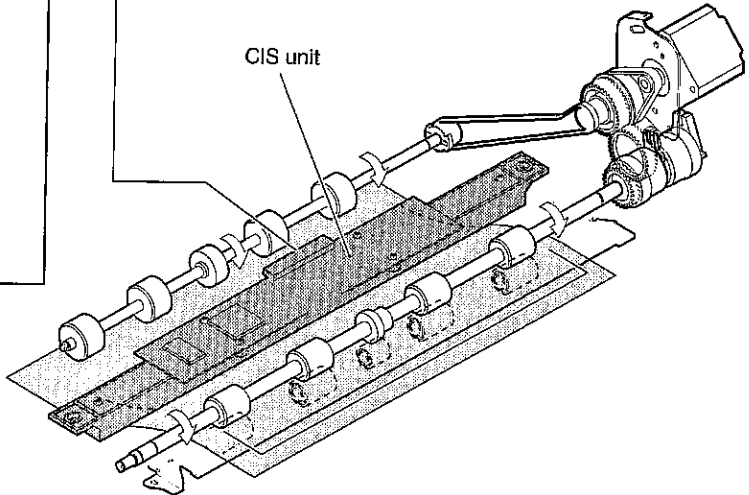
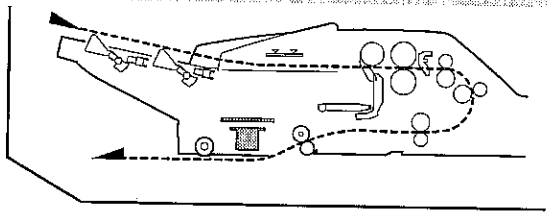
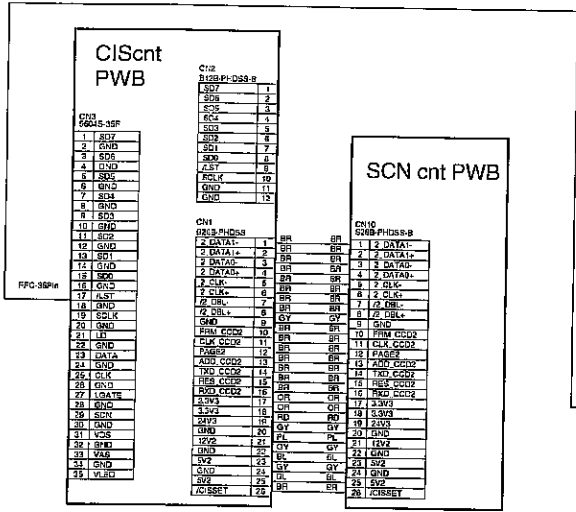
b-11. SPF document paper pass detector 2

- 1) Remove the cabinet. (See "a-1. Cabinet" in "[External outfit section]")
- 2) Remove the document feed tray unit. (See "a. Paper feed unit" in this section)
- 3) Remove the No. 1 resist roller idle, the paper feed paper guide lower unit, and the No. 1 resist roller drive. (See "b-5. No. 1 resist roller (Drive)" in this section)
- 4) Remove the transport roller 1 (Drive). (See "b-10. Transport roller 1 (Drive)" in this section)
- 5) Disconnect the connector, and remove the SPF document paper pass detector 2.



[CIS section]

A. Major parts and signal functions



| Code | Signal name | Name | Function/Operation | Type | Note |
|------|-------------|--------------------------|---|------|------|
| CIS | CIS | CIS control PWB/CIS unit | Scans document images (back surface) and controls the CIS unit. | | |

B. Operational descriptions

(1) Document scan

CIS unit: The CIS (Contact Image Sensor) unit is the contact type image scan sensor, and is assembled to the SPF to scan document images.

The LED light in the CIS unit is radiated to a document, and the reflected light is passed through the lens to the photoelectric conversion elements to form images.
(Pixel: 7196 pixels, resolution: 600dpi)
The CIS and the CCD assembled in the lens unit allow simultaneous scan of duplex surfaces of a document.

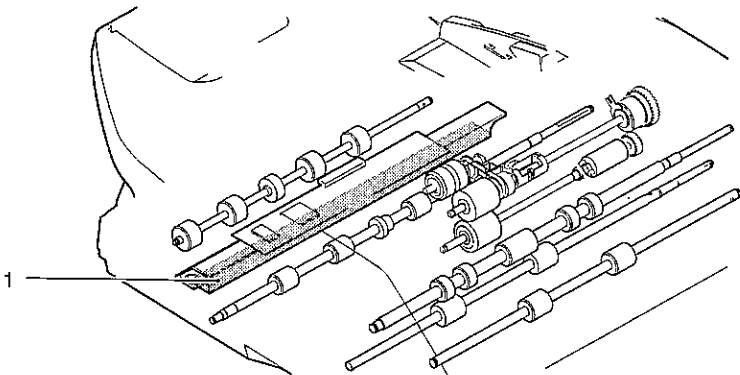
C. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

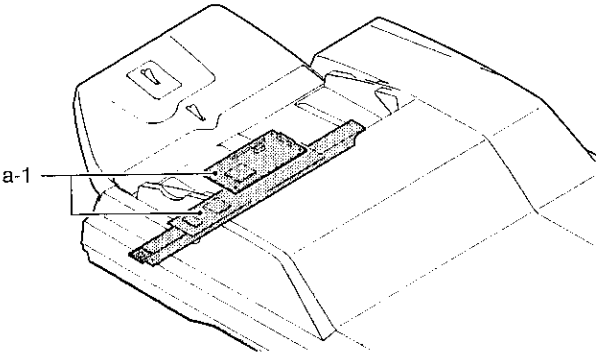
| Unit name | | No. | Part name | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|-----------|--|-----|-----------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------|
| SPF | | 1 | Exposure section (CIS unit) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

(Note 1) Replacement reference: For replacement, refer to each paper feed port counter value.
SPF section : 100K or 1 year



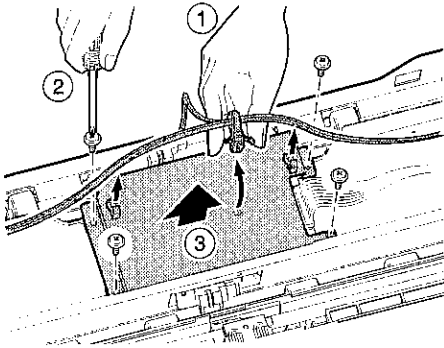
(2) Maintenance and parts replacement
(Replacement parts)

| No. | Unit | Parts |
|-----|------|--------------------------|
| a | 1 | CIS control PWB/CIS unit |

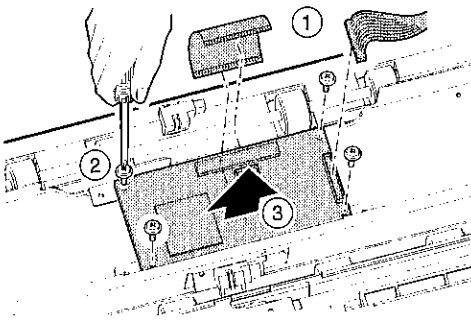


a-1. CIS control PWB/CIS unit

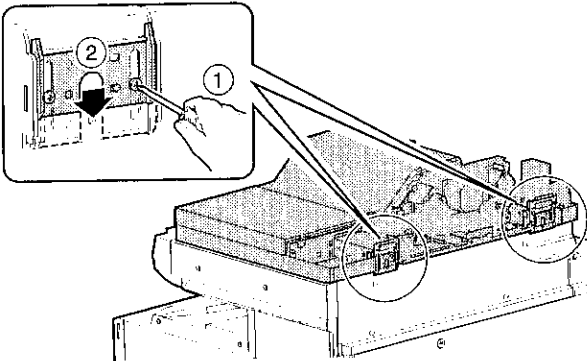
- 1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Remove the document tray unit. (See "a. Document tray unit" in the previous section, "[Paper feed tray section]")
- 3) Remove the harness, then remove the PWB cover.



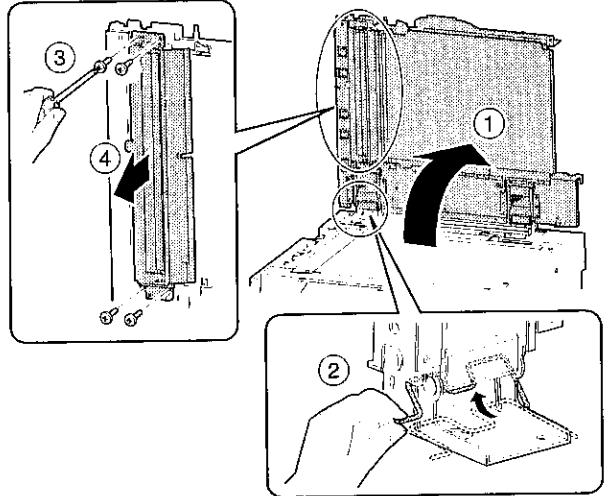
- 4) Remove each cable, and remove the PWB.



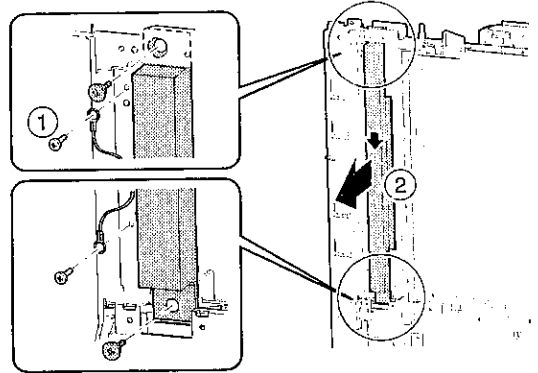
- 5) Loosen the hinge screws to lower the two fittings.



- 6) Open the SPF, attach the SPF drop preventing stopper, and remove the paper guide.

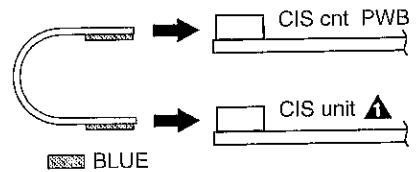
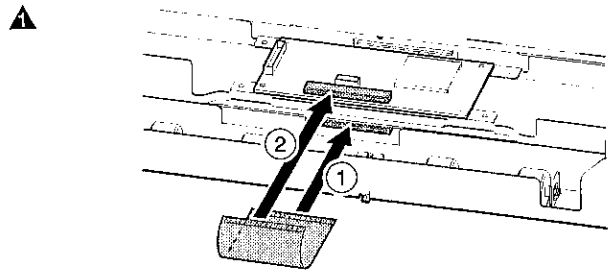


- 7) Remove the ground lead and CIS.

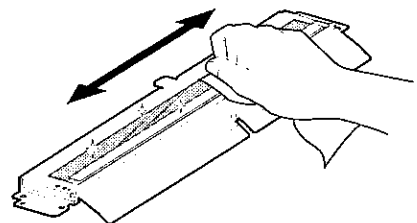


Caution when assembling

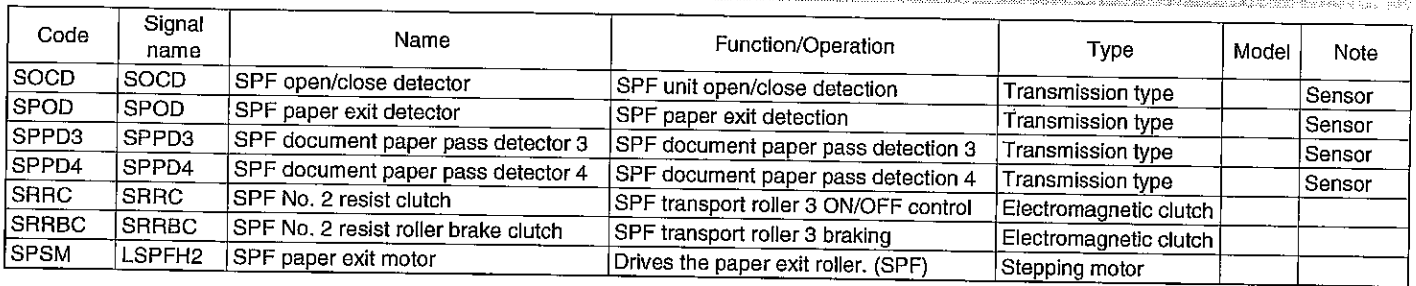
- When assembling the flat cable, first attach the lower side then the upper side.



- ▲ • Clean the both surfaces of the paper guide glass.



1



(1) Document feed, transport, scan, paper exit, and operating speed

The document transport speed varies depending on the scan mode and the scan magnification ratio as shown below.

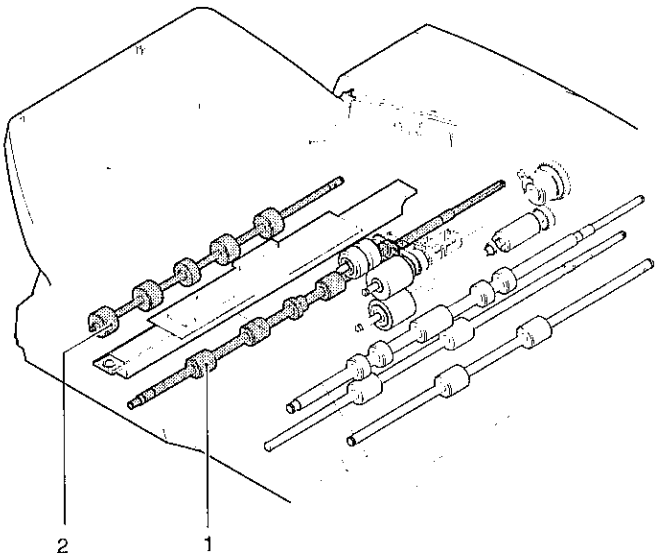
| Scan mode | Magnification ratio | Document transport speed |
|---------------------|---------------------|--------------------------|
| Single surface scan | Up to 117% | 360mm/sec |
| Single surface scan | 118% or above | 220mm/sec |
| Duplex scan | Up to 100% | 220mm/sec |
| Duplex scan | 101% or above | 110mm/sec |

C. Maintenance and parts replacement

(1) Maintenance list

X: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace Δ: Adjust ☆: Lubricate □: Shift position

| | | Unit name | No. | Part name | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|-------------|--------------------|-----------|-----|---------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------|
| | | | | | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| SPF section | Paper exit section | | 1 | No. 2 resist roller | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | | 2 | Paper exit roller | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |



(2) Maintenance and parts replacement

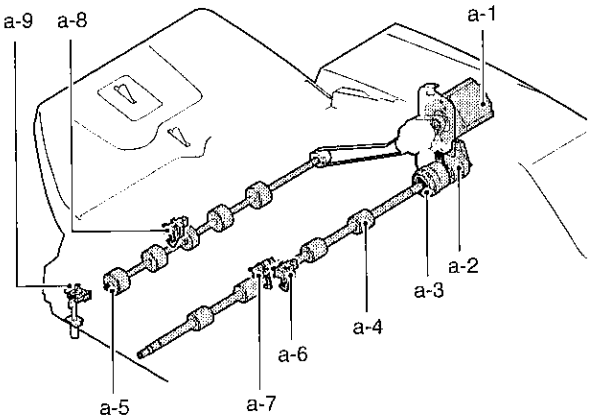
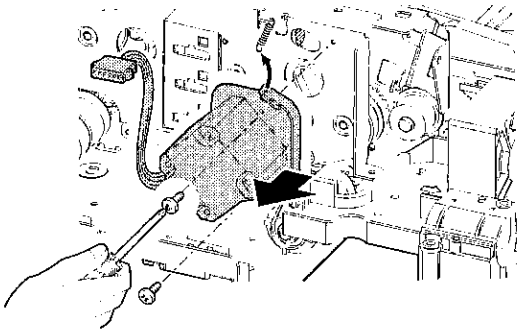
(Replacement parts)

| No. | Unit | Parts | |
|-----|------|-------|---|
| a | | 1 | SPF paper exit motor |
| | | 2 | SPF paper transport roller 3 brake clutch |
| | | 3 | SPF paper transport roller 3 clutch |
| | | 4 | No. 2 resist roller (Drive) ○ |
| | | 5 | Paper exit roller (Drive) ○ |
| | | 6 | SPF document paper pass detector 3 |
| | | 7 | SPF document paper pass detector 4 |
| | | 8 | SPF paper exit detector |
| | | 9 | SPF open/close detector |

a-1. SPF paper exit motor

1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")

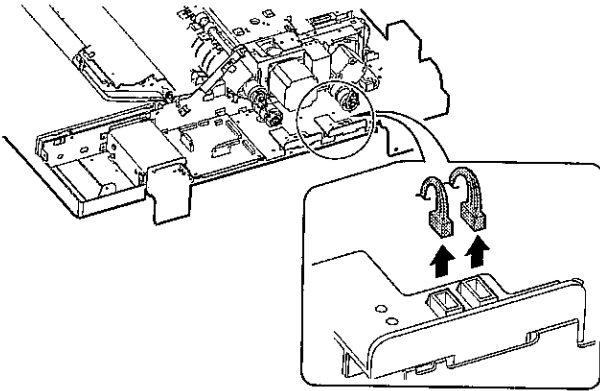
▲ 2) Remove the tension SP and remove the SPF paper feed/paper transport motor.



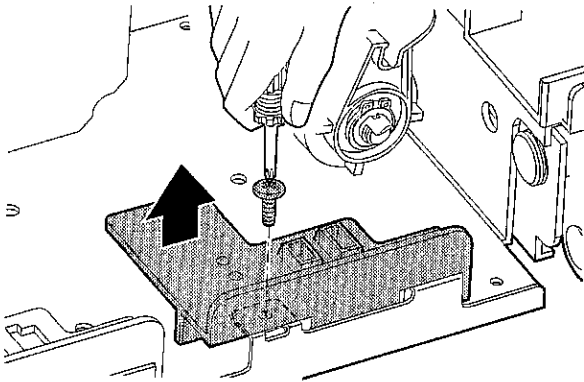
a-2. SPF paper transport roller 3 brake clutch

a-3. SPF paper transport roller 3 clutch

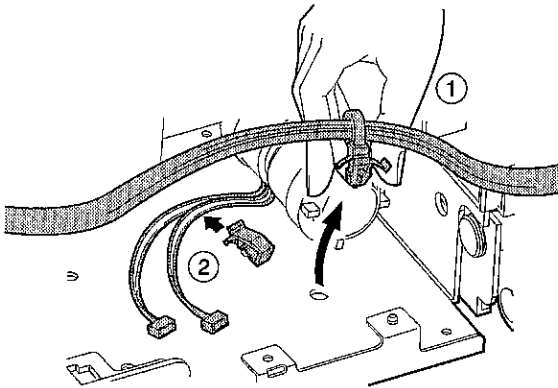
- 1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Disconnect the connectors.



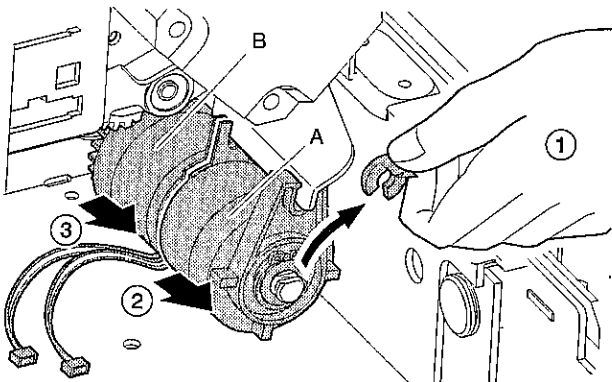
- 3) Remove the connector base.



- 4) Remove the super snap band to remove the cable.

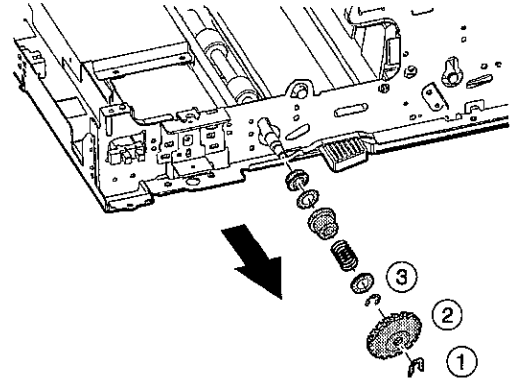


- 5) Remove the plastic E-ring, and remove the SPF paper transport roller 3 brake clutch (A), and the SPF paper transport roller 3 clutch (B).



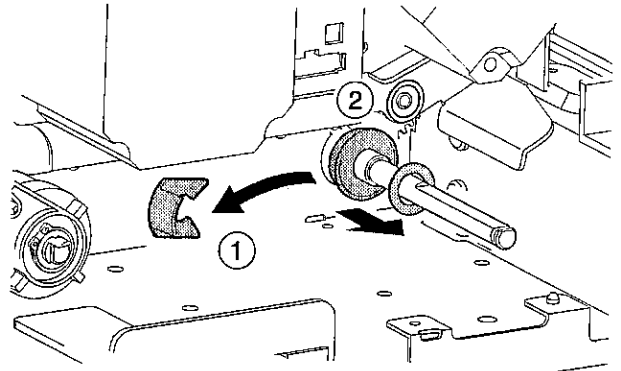
a-4. No. 2 resist roller (Drive)

- 1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Remove the document tray unit. (See "a. Document tray unit" in the previous section, "[Paper feed tray section]")
- 3) Remove the plastic E-ring to remove the jam release knob.

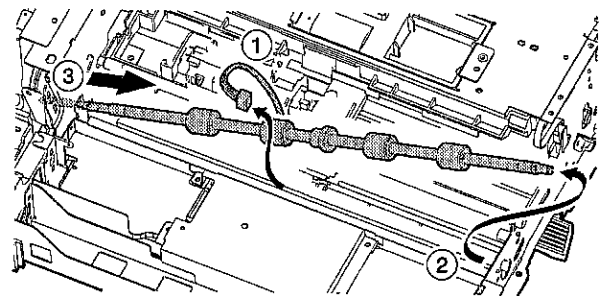


- 4) Remove the electromagnetic clutch. (See "a-2. SPF paper transport roller 3 brake clutch" in this section)

- ▲ 5) Remove the rear side bearing to remove the plastic E-ring spacer

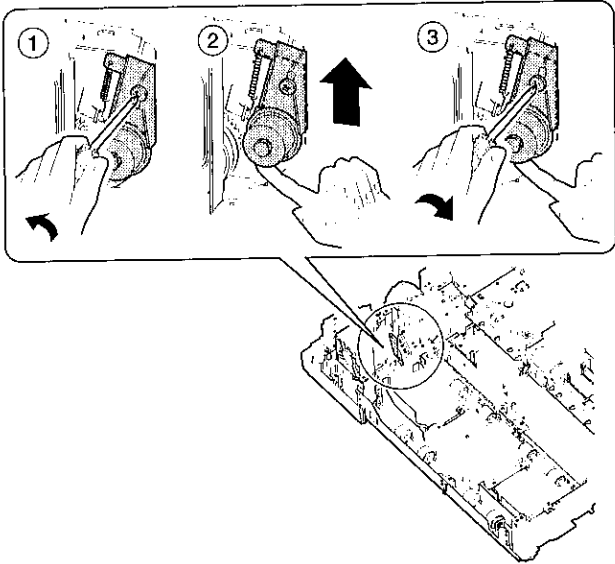


- 6) Disconnect the connector, and remove the No. 2 resist roller drive in the arrow direction.



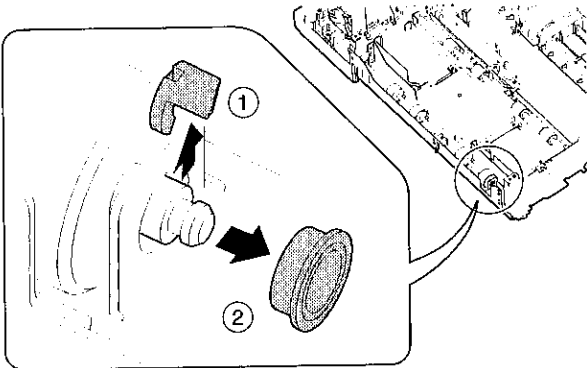
a-5. Paper exit roller (Drive)

- 1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Remove the document tray unit. (See "a. Document tray unit" in the previous section, "[Paper feed tray section]")
- 3) Loosen the screw to raise up the belt tension roller; then fix it by tightening the screw again.

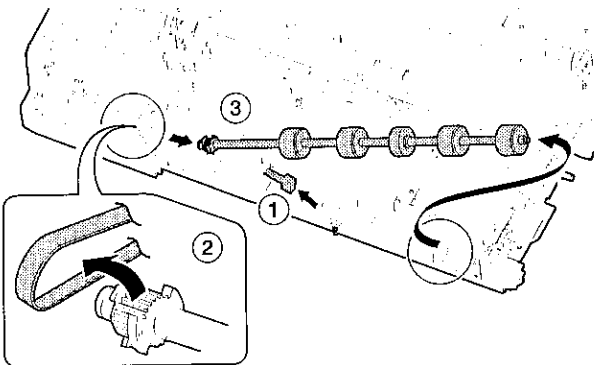


▲ NOTE: When fixing, apply a tension to the spring.

- 3) Remove the plastic E-ring to remove the bearing.



- 4) Disconnect the connector, and remove the paper exit roller drive in the arrow direction.



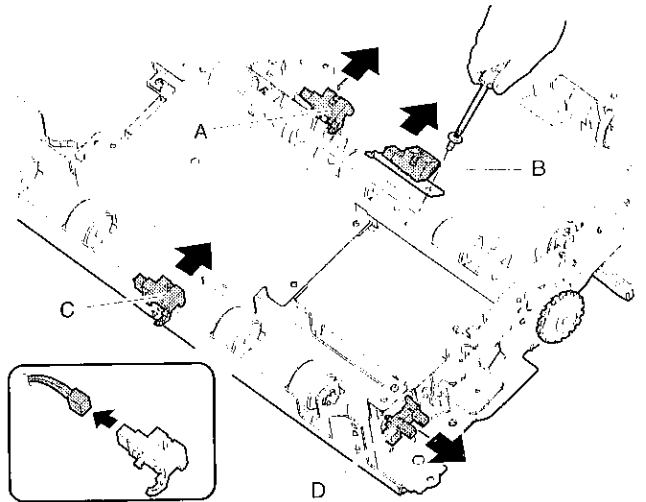
a-6. SPF document paper pass detector 3

a-7. SPF document paper pass detector 4

a-8. SPF paper exit detector

a-9. SPF open/close detector

- 1) Remove the cabinet. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Remove the document tray unit. (See "a. Document tray unit" in the previous section, "[Paper feed tray section]")
- 3) Disconnect the connectors, and remove the SPF document paper pass detector 3 (A), the SPF document paper pass detector 4 (B), the SPF paper exit detector (C), and the SPF open/close detector (D).



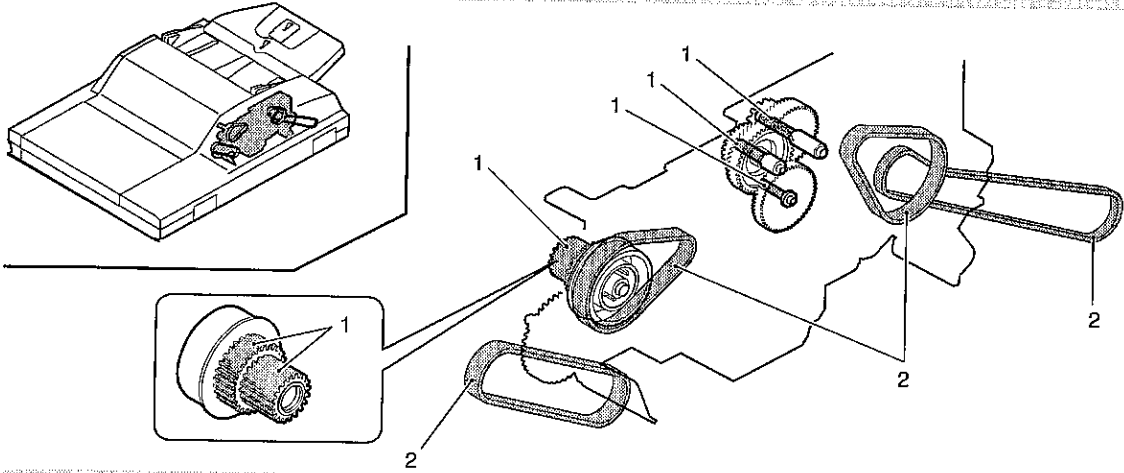
[Other]

A. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

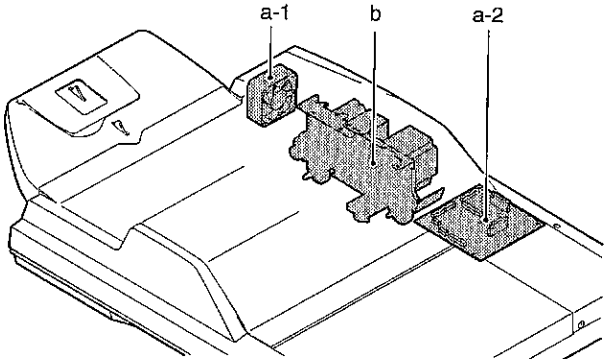
| Unit name | | No. | Part name | When calling | AR-M550U/N (PM: 250K) AR-M620U/N, AR-M700U/N (PM: 300k) | | | | | | | | Remark |
|-----------|---------------|-----|----------------|--------------|--|------|------|-------|-------|-------|-------|-------|---------------|
| | | | | | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | |
| SPF | Drive section | 1 | Gears (Grease) | × | × | × | × | × | × | × | × | × | UKOG-0299FCZZ |
| | | 2 | Belts | | × | × | × | × | × | × | × | × | |



(2) Maintenance and parts replacement

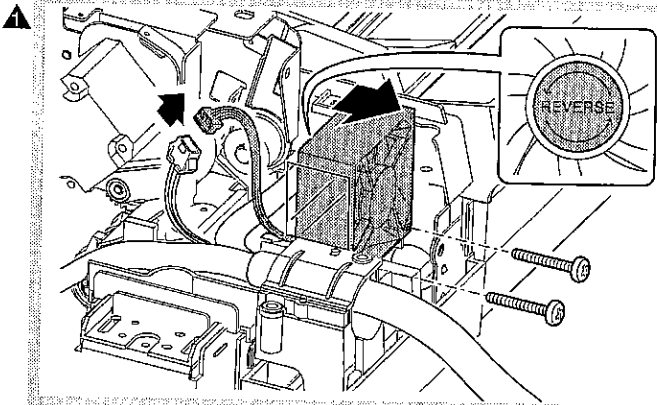
(Replacement parts)

| No. | Unit | Parts | |
|-----|------------|-------|---------------|
| a | | 1 | SPF fan motor |
| | | 2 | SPF PWB |
| b | Drive unit | | |



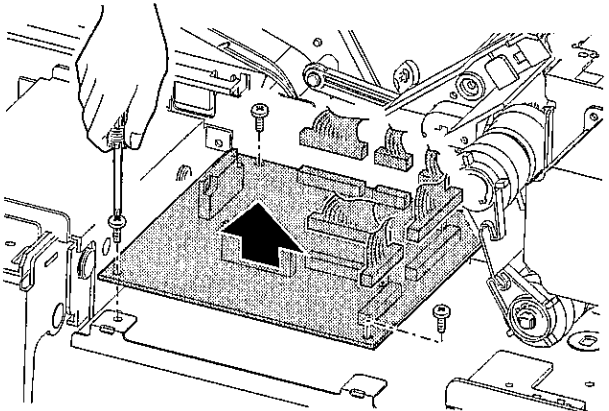
a-1. SPF fan motor

- 1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Disconnect the connector, and remove the SPF fan motor.



a-2. SPF PWB

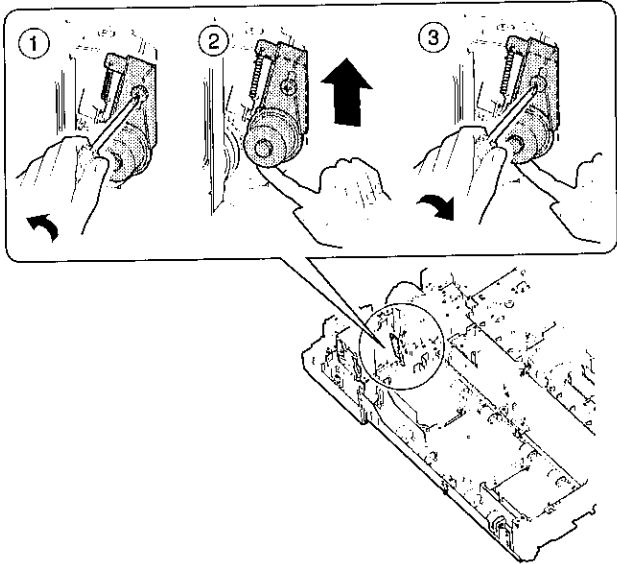
- 1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Disconnect the connector, and remove the SPF PWB.



▲ : Feb. 6 2004

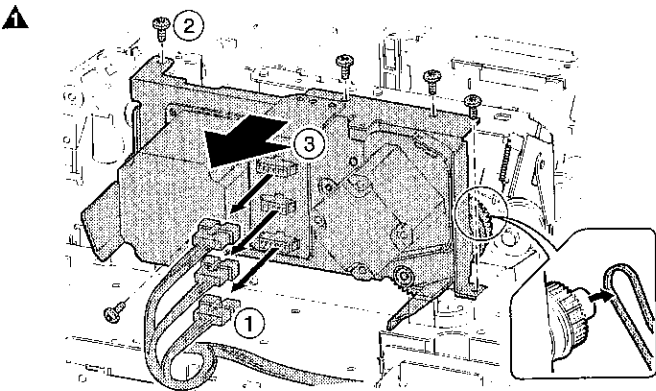
b. Drive unit

- 1) Remove the rear cover. (See "a-1. Cabinet" in the previous section, "[External outfit section]")
- 2) Remove the electromagnetic clutch.
- ▲ 3) Loosen the screw to raise up the belt tension roller; then fix it by tightening the screw again.



NOTE: When fixing, apply a tension to the spring.

- 4) Remove the drive unit.



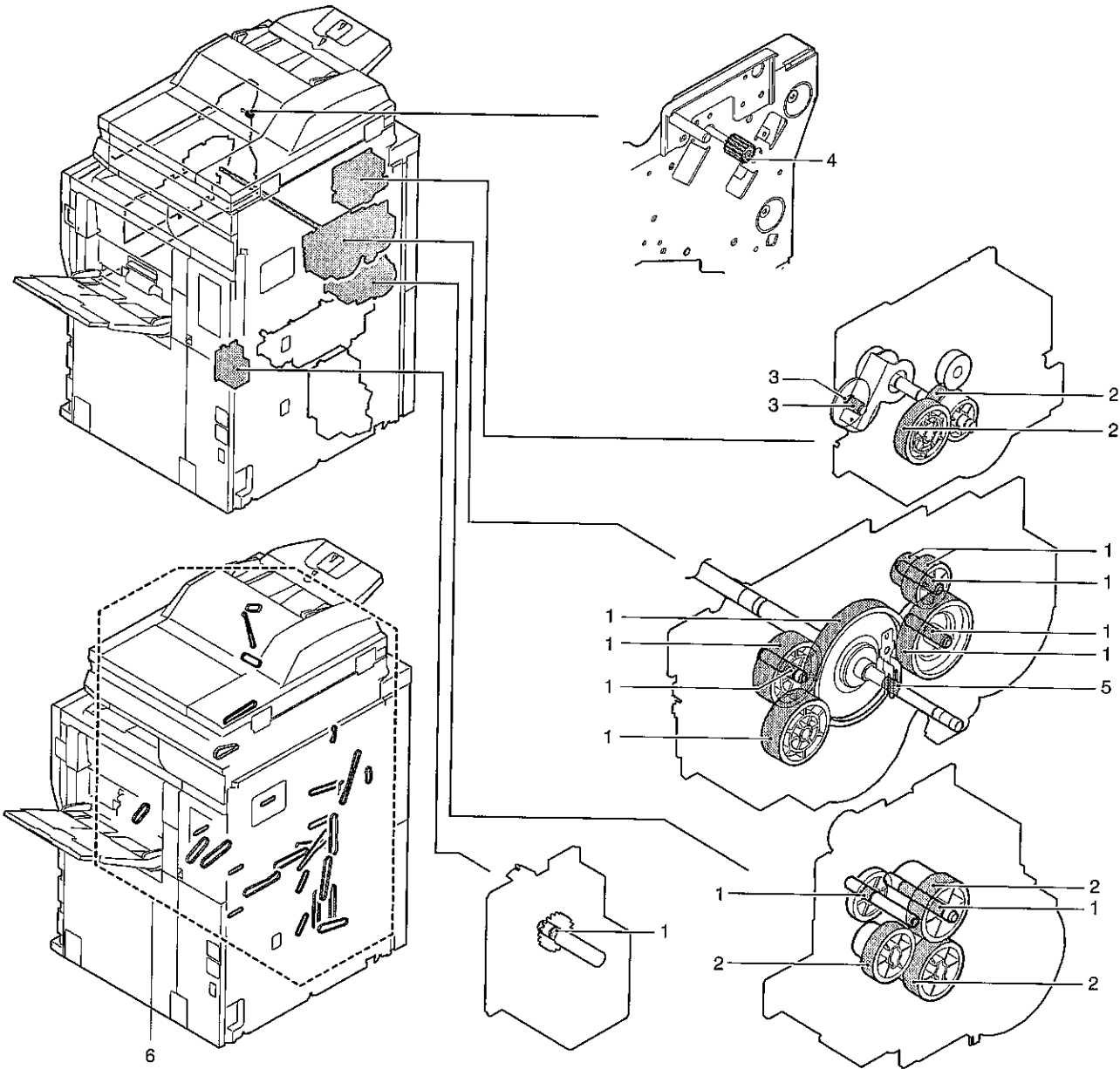
8. Drive section

A. Maintenance and parts replacement

(1) Maintenance list

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| Unit name | No. | Part name | When calling | AR-M550U/N (PM: 250K) AR-M620U/N, AR-M700U/N (PM: 300K) | | | | | | | | Remark |
|---------------|-----|--------------------------|--------------|--|------|------|-------|-------|-------|-------|-------|---------------|
| | | | | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | |
| Drive section | 1 | Gear (Grease) | × | × | × | × | × | × | × | × | × | UKOG-0307FCZZ |
| | 2 | Gear (Grease) | × | × | × | × | × | × | × | × | × | UKOG-0299FCZZ |
| | 3 | Gear (Grease) | × | × | × | × | × | × | × | × | × | UKOG-0062FCZZ |
| | 4 | Gear (Grease) | × | × | × | × | × | × | × | × | × | UKOG-0235FCZZ |
| | 5 | Gear (Conductive grease) | × | × | × | × | × | × | × | × | × | UKOG-0012QSZZ |
| | 6 | Belts | | × | × | × | × | × | × | × | × | |

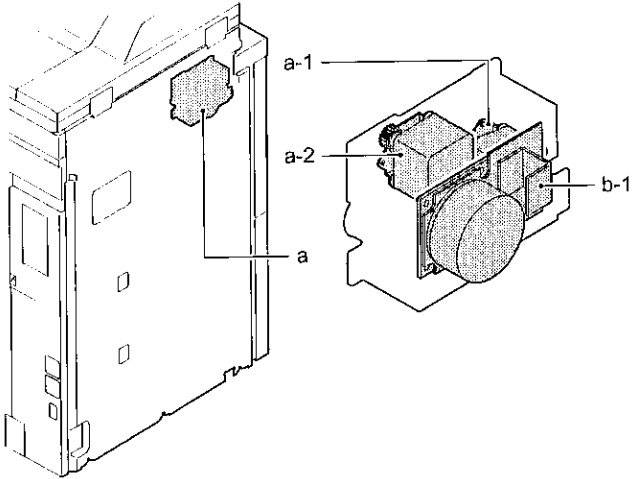


(2) Maintenance and parts replacement

[Fusing drive section]

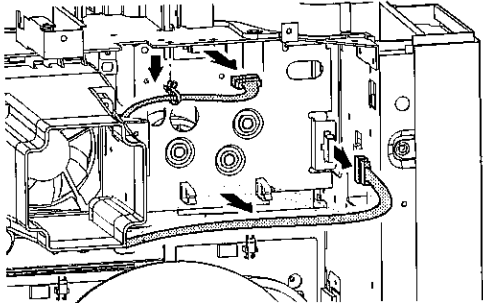
(Replacement parts)

| No. | Unit | Parts | |
|-----|-------------------|-------|--------------------|
| a | Fusing drive unit | 1 | Paper exit motor 1 |
| | | 2 | Paper exit motor 2 |
| b | | 1 | Fusing motor |

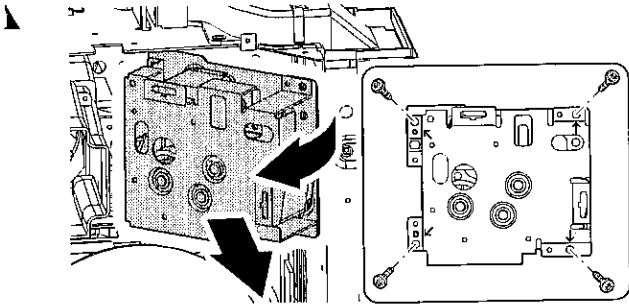


a. Fusing drive unit

- 1) Remove the fusing unit. (See "a. Fusing unit" in the "6. Fusing section")
- 2) Remove the fusing motor. (See "b-1. Fusing motor" in this section)
- 3) Disconnect the connector and remove the harness clamp.



- 4) Remove the fusing drive unit.

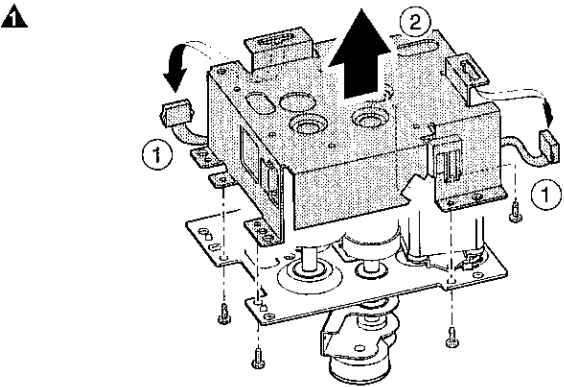


※ Remove the screw which was indicated with the arrow mark.

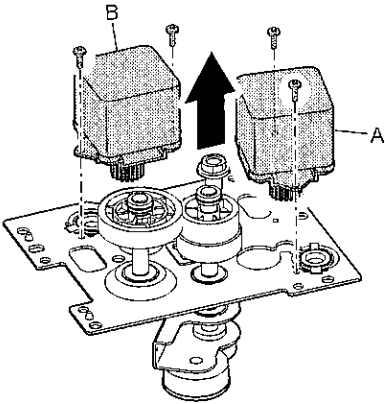
a-1. Paper exit motor 1

a-2. Paper exit motor 2

- 1) Remove the fusing unit. (See "a. Fusing unit" in the "6. Fusing section")
- 2) Remove the fusing drive unit. (See "b-1. Fusing motor" in this section)
- 3) Disconnect the connector, and remove the fusing drive frame.

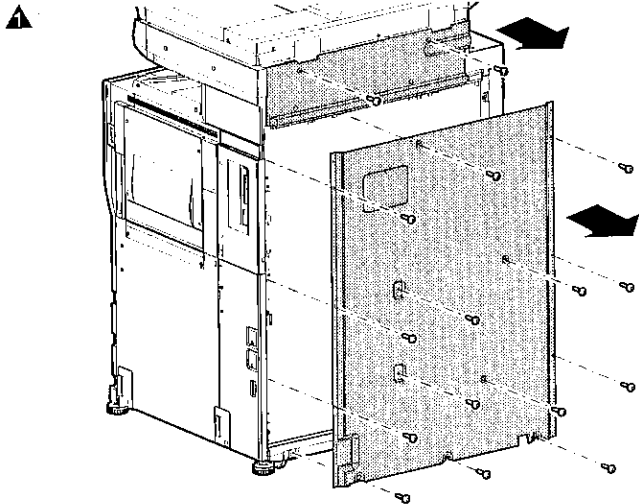


- 4) Remove the paper exit motor 1 (A) and the paper exit motor 2 (B).

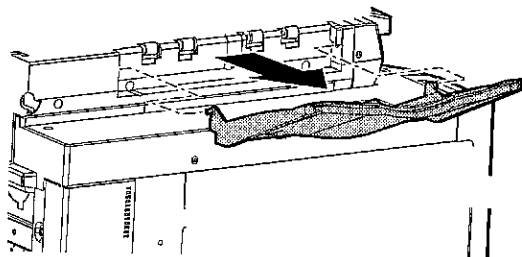


b-1. Fusing motor

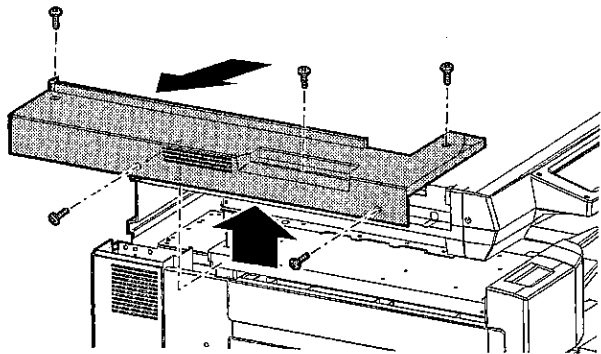
- 1) Remove the rear cabinet and the rear cabinet upper.



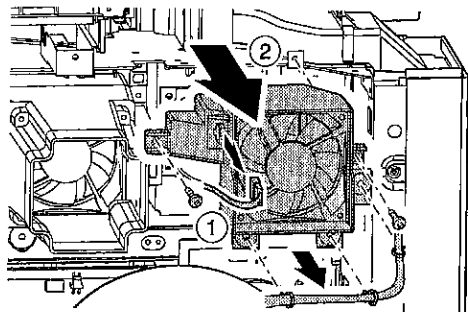
2) Remove the tray.



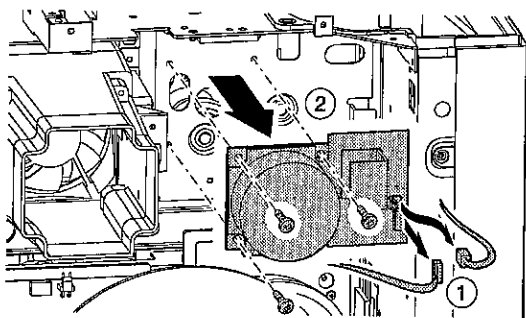
3) Remove the left cover cabinet.



4) Disconnect the connector and remove the harness clamp, and remove the paper exit tray duct R unit.



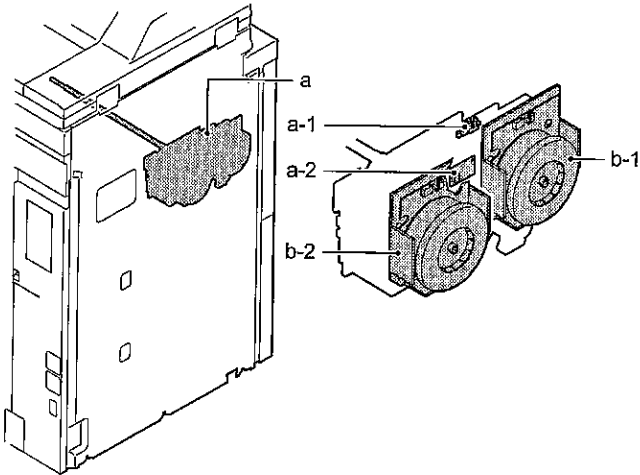
5) Disconnect the connector and remove the fusing motor.



[Drum drive section]

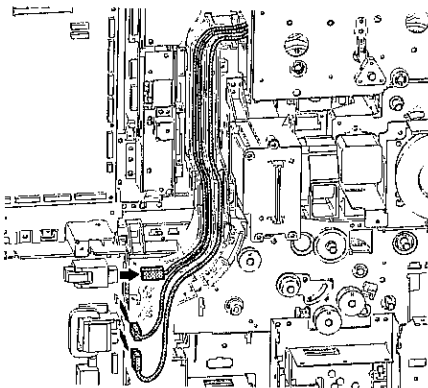
(Replacement parts)

| No. | Unit | Parts | |
|-----|-----------------|-------|--------------------------------|
| a | Drum drive unit | 1 | Waste toner pipe lock detector |
| | | 2 | Process humidity sensor |
| b | Other | 1 | OPC drum motor |
| | | 2 | Developing motor |

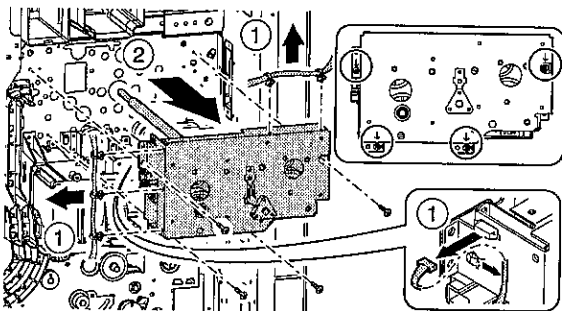


a. Drum drive unit

- 1) Remove the developing unit and the process unit. (See "a. Developing unit"/4. Image process section "[OPC drum section]" and "a. Process unit")
- 2) Remove the OPC drum motor and the developing motor. (See "b-1. OPC drum motor" in this section)
- 3) Disconnect the connector, and remove the harness from the harness holder.



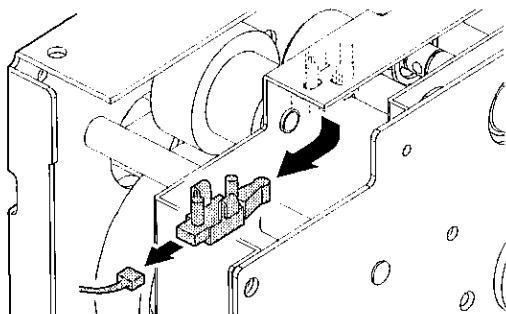
4) Disconnect the connector and remove the harness clamp, and remove the drum drive unit.



* Remove the screw which was indicated with the arrow mark.

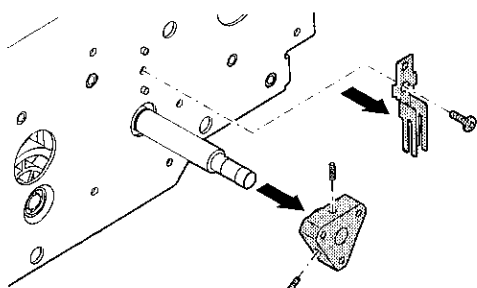
a-1. Waste toner pipe lock detector

- 1) Remove the developing unit and the process unit.
- 2) Remove the OPC drum motor and the developing motor. (See "b-1. OPC drum motor" and "b-2. Developing motor" in this section)
- 3) Remove the drum drive unit. (See "a. Drum drive unit" in this section)
- 4) Disconnect the connector, and remove the waste toner pipe lock detector.

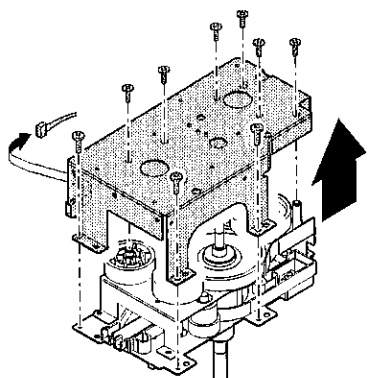


a-2. Process humidity sensor

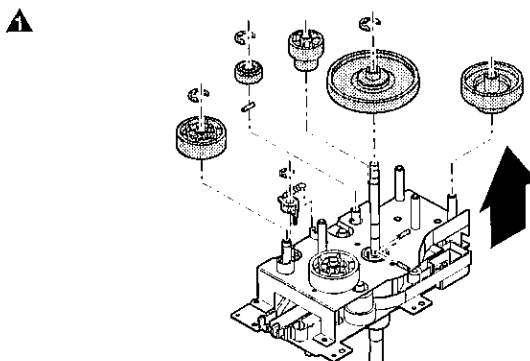
- 1) Remove the developing unit. (See "a. Developing unit" in the "[Developer tank section]")
- 2) Remove the process unit. (See "a. Process unit" in the "[OPC drum section]")
- 3) Remove the OPC drum motor and the developing motor. (See "b-1. OPC drum motor" in this section)
- 4) Remove the drum drive unit. (See "a. Drum drive unit" in this section)
- 5) Remove the drum earth plate. Remove the set screw and the fly-wheel joint. Remove the E-ring.



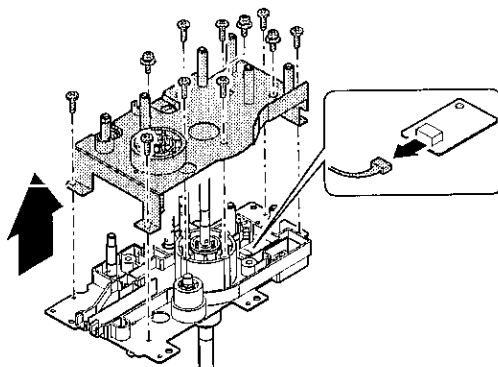
- 6) Disconnect the connector, and remove the drum drive frame.



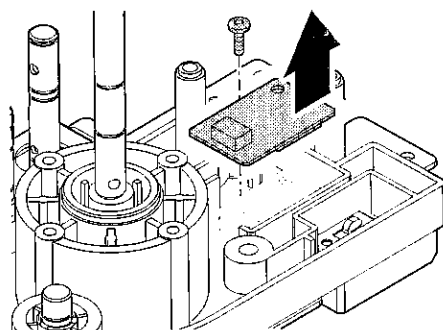
- 7) Remove the parts.



- 8) Disconnect the connector, and remove the sensor plate.



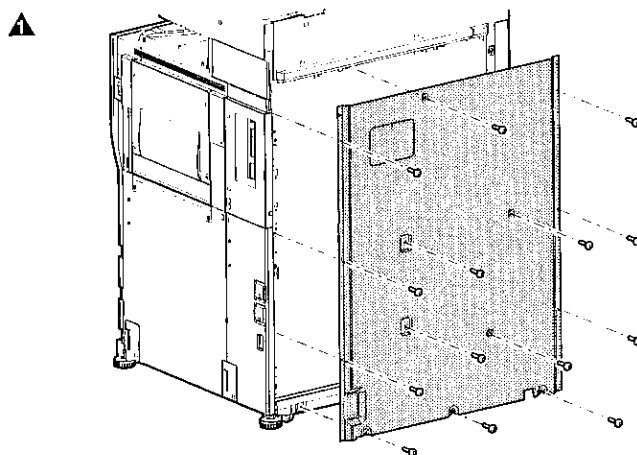
- 9) Remove the process humidity sensor.



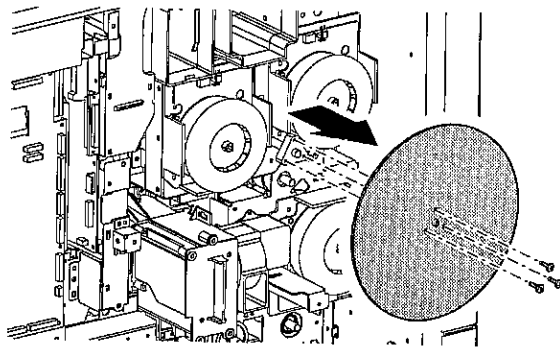
b-1. OPC drum motor

b-2. Developing motor

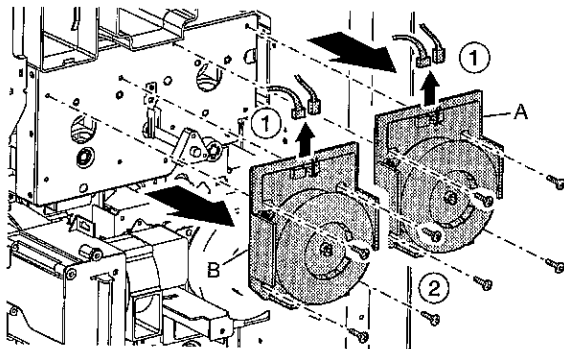
- 1) Remove the rear cabinet.



2) Remove the flywheel.

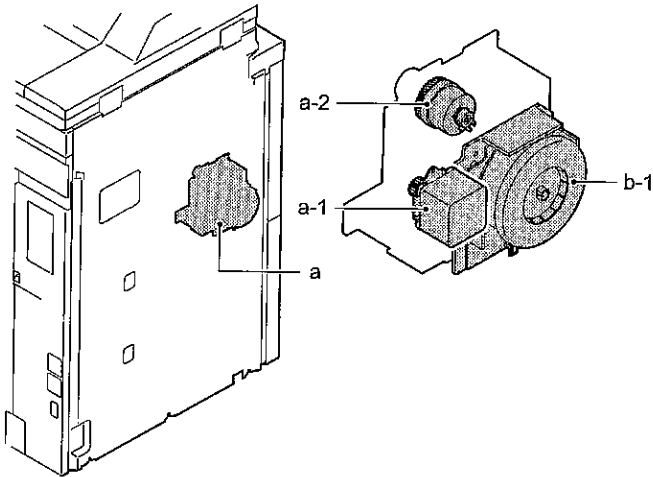


3) Disconnect the connector, and remove the OPC drum motor (A) and the developing motor (B).



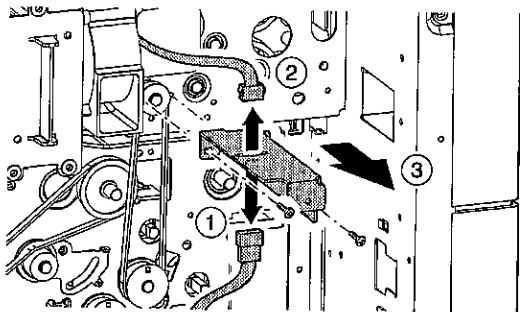
[Paper feed/paper transport drive section]
(Replacement parts)

| No. | Unit | Parts |
|-----|-----------------|-----------------------------------|
| a | Main drive unit | 1 Resist roller front drive motor |
| | | 2 Resist roller clutch |
| b | Other | 1 Main motor |

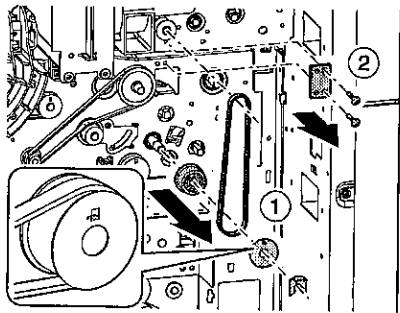


a. Main drive unit

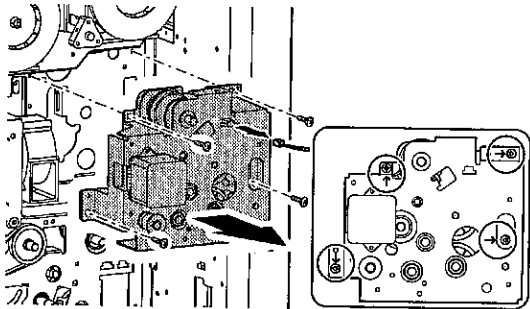
- 1) Remove the resist roller unit. (See "2. Paper feed, paper transport, duplex, and paper exit reverse sections" "(Vertical paper transport section 2)", "a. Resist roller unit")
- 2) Remove the flywheel. (See "b-1. OPC drum motor" in this section (a. Drum drive unit))
- 3) Remove the main motor. (See "a-1. Main motor" in this section)
- 4) Disconnect the connector, and remove the eternal outfit mounting plate.



5) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley. Remove the joint plate.



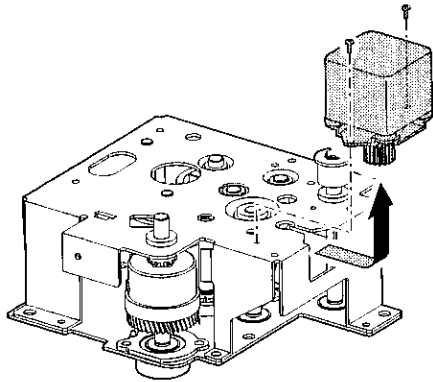
- * When installing, be careful of the direction of the belt holding sheet.
- 6) Disconnect the connector, and remove the main drive unit.



* Remove the screw which was indicated with the arrow mark.

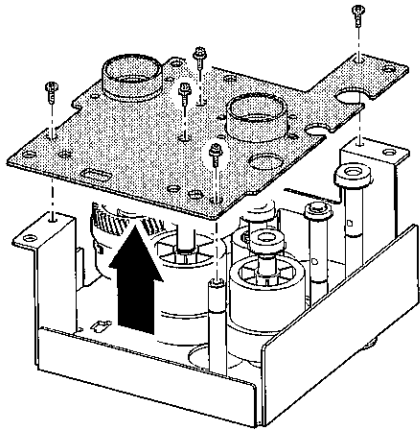
a-1. Resist roller front drive motor

- 1) Remove the resist roller unit. (See "2. Paper feed, paper transport, duplex, and paper exit reverse sections" "(Vertical paper transport section 2)", "a. Resist roller unit")
- 2) Remove the flywheel. (See "b-1. OPC drum motor" in this section)
- 3) Remove the main motor. (See "a-1. Main motor" in this section)
- 4) Remove the main drive unit. (See "a-1. Main motor" in this section)
- 5) Remove the resist roller front drive motor.

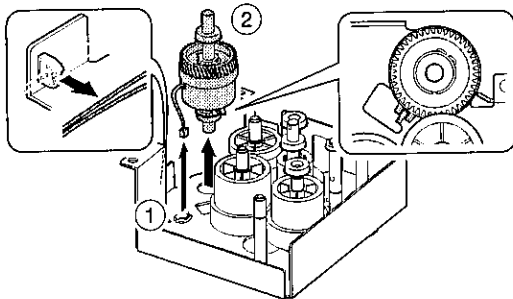


a-2. Resist roller clutch

- 1) Remove the resist roller unit. (See "2. Paper feed, paper transport, duplex, and paper exit reverse sections" "(Vertical paper transport section 2)", "a. Resist roller unit")
- 2) Remove the flywheel. ((See "b-1. OPC drum motor" in this section (a. Drum drive unit))
- 3) Remove the main motor. (See "a-1. Main motor" in this section)
- 4) Remove the main drive unit. (See "a-1. Main motor" in this section)
- 5) Disconnect the connector, and remove the main drive frame.

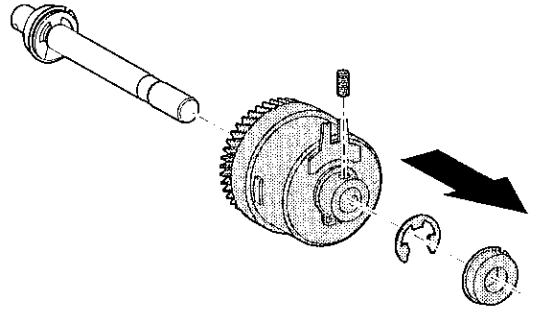


- 6) Disconnect the connector, and remove the resist roller clutch unit.



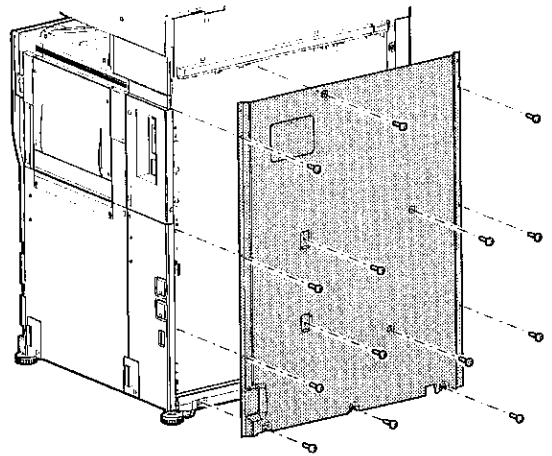
* When installing, be sure to ensure that the projection of the plate is engaged in the clutch rotation stopper.

- 7) Remove the bearing, the E-ring, and the set screw, and remove the resist roller clutch.

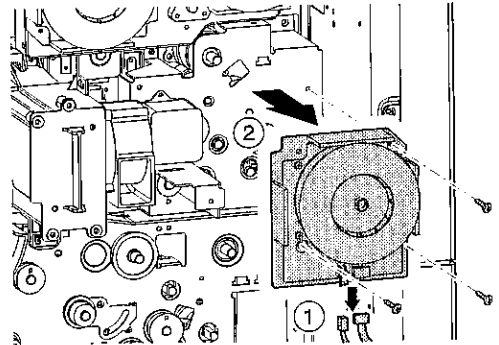


a-1. Main motor

- 1) Remove the rear cabinet.



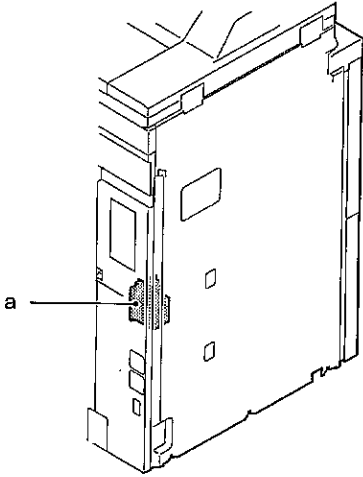
- 2) Disconnect the connector, and remove the main motor.



[Manual paper feed drive section]

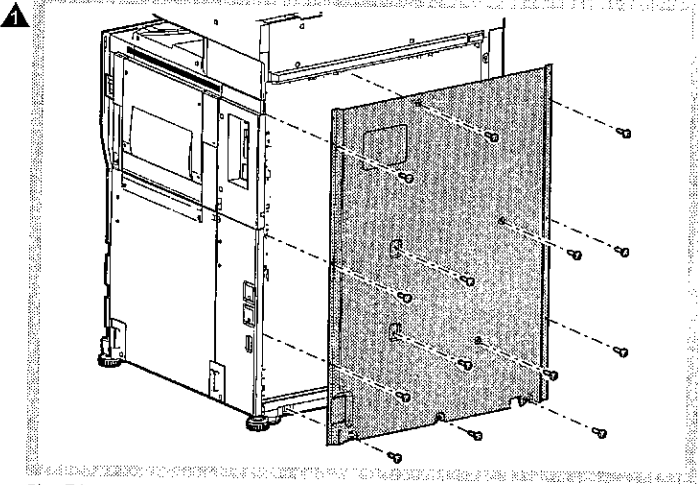
(Replacement parts)

| No. | Unit | Parts |
|-----|------------------------------|-------|
| a | Manual paper feed drive unit | |

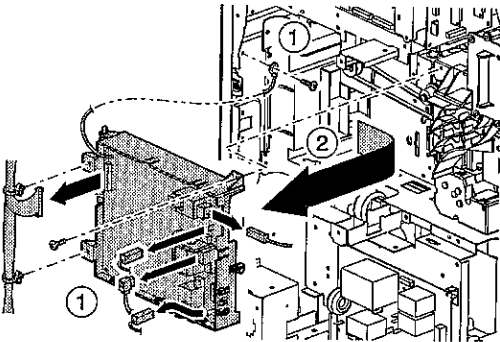


a. Manual paper feed drive unit

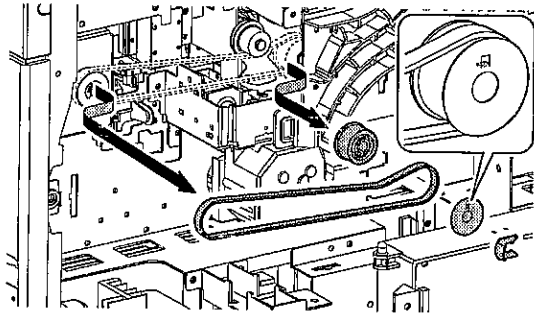
- 1) Remove the rear cabinet.



- 2) Disconnect the connector, the harness clamp, and the earth wire. Remove the high voltage PWB unit.

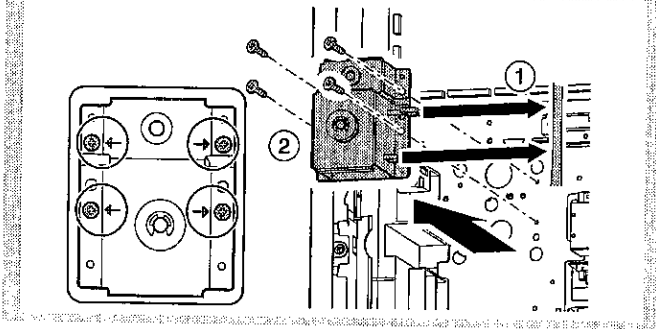


- 3) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley.



* When installing, be careful of the direction of the belt holding sheet.

- ▲ 4) Remove the harness from the clamp, and remove the manual paper feed unit.

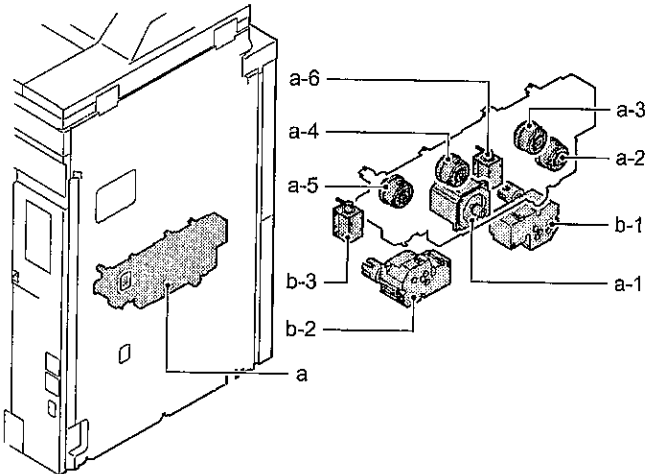


* Remove the screw which was indicated with the arrow mark.

[1/2 paper feed drive section]

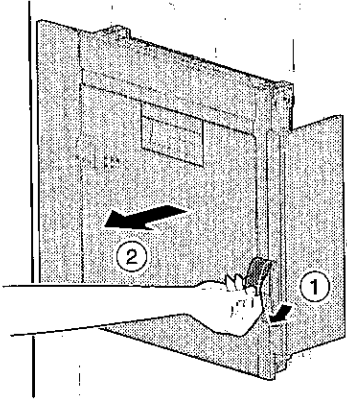
(Replacement parts)

| No. | Unit | Parts |
|-----|---------------------------|---|
| a | 1/2 paper feed drive unit | 1 Vertical paper transport motor |
| | | 2 Paper feed tray 3/4 paper transport clutch 2 |
| | | 3 Paper feed clutch (Paper feed tray 1) |
| | | 4 Horizontal paper transport clutch |
| | | 5 Paper feed clutch (Paper feed tray 2) |
| | | 6 Paper pickup solenoid (Paper feed tray 1) |
| b | Other | 1 Remove the paper tray lift-up motor (paper feed tray 1) |
| | | 2 Paper tray lift-up motor (Paper feed tray 2) |
| | | 3 Paper pickup solenoid (Paper feed tray 2) |

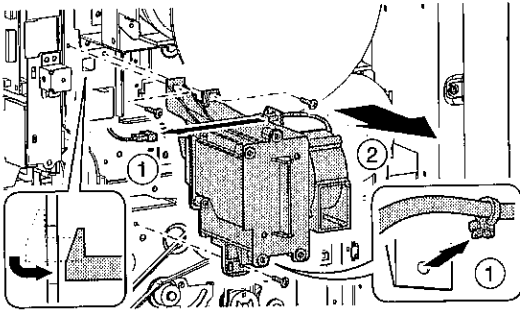


a. 1/2 paper feed drive unit

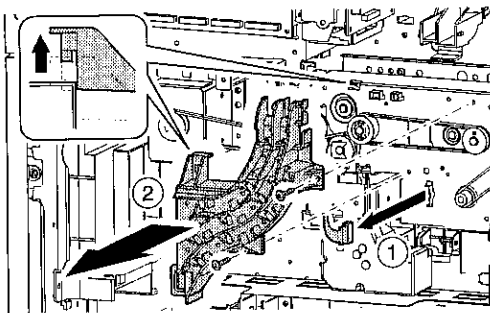
- 1) Remove the main motor. (See "a-1. Main motor" in the "[Paper feed/paper transport drive section]")
- 2) Remove the high voltage PWB unit. (See "a. Manual paper feed drive unit" in the "[Manual paper feed drive section]")
- 3) Pull out the left door.



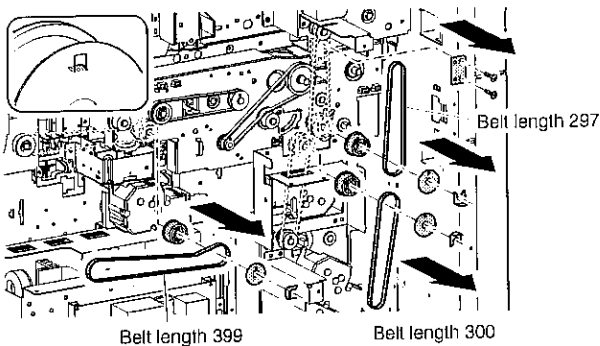
- 4) Disconnect the connector and remove the harness clamp. Remove the DV fan unit.



- 5) Disconnect the connector and remove the harness holder.

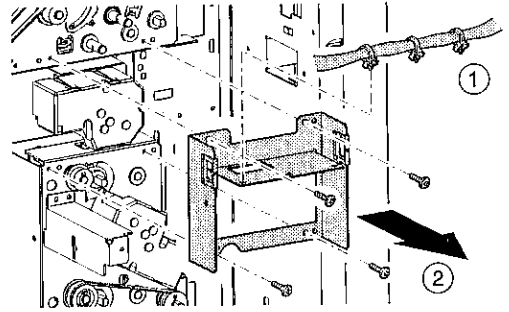


- 6) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley. Remove the joint plate.



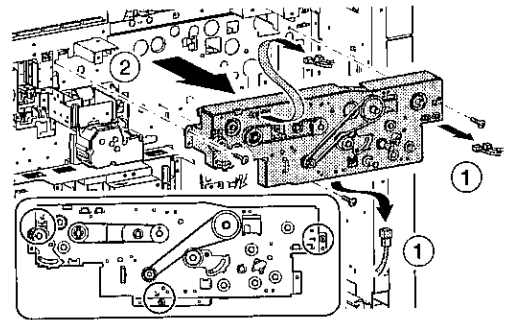
* When installing, be careful of the belt length and the belt holding sheet direction.

- 7) Remove the harness, and remove the drive joint plate.



* When installing, temporarily fix the 1/2 paper feed drive unit to the main unit, and install the drive joint plate. Then tighten the screw of the drive unit securely.

- 8) Disconnect the connector and remove the harness clamp. Remove the 1/2 paper feed drive unit.

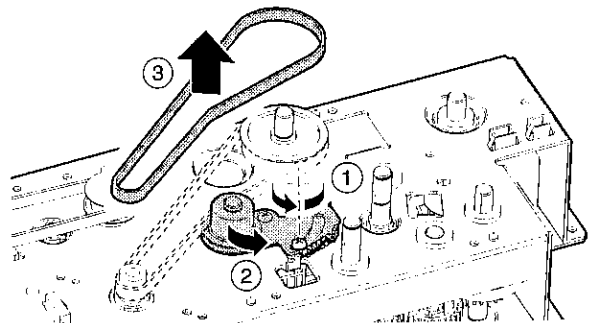


▲ * If the left door is completely pulled out, the unit may drop off. Be careful to avoid it.

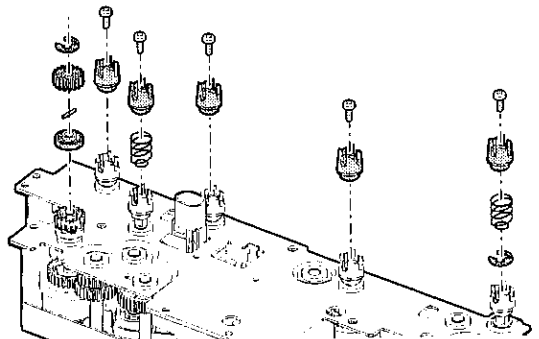
* Remove the screw which was indicated with the arrow mark.

a-1. Vertical paper transport motor

- 1) Remove the 1/2 paper feed drive unit. (See "a. 1/2 paper feed drive unit" in this section)
- 2) Loosen the screw to release the tension, and remove the belt.

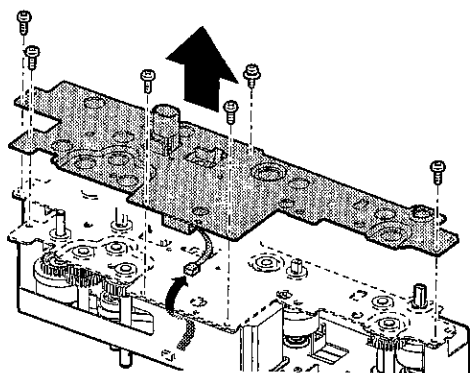


- 3) Remove the parts.

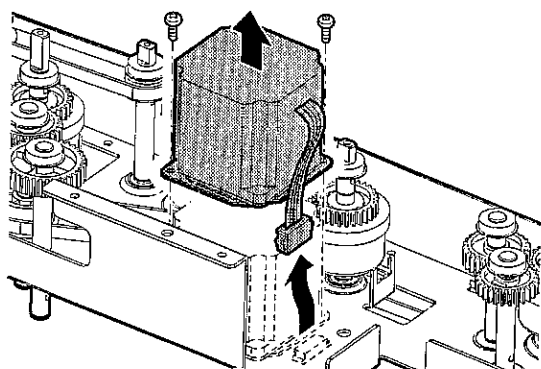


▲ * Attach the spring to the longer shaft.

- 4) Remove the 1/2 paper feed drive frame lower. Remove the harness clamp.

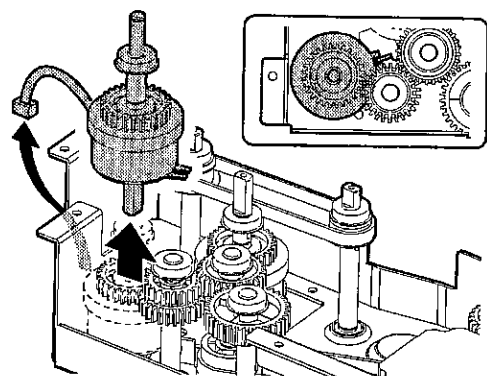


- 5) Disconnect the connector, and remove the vertical paper transport motor.

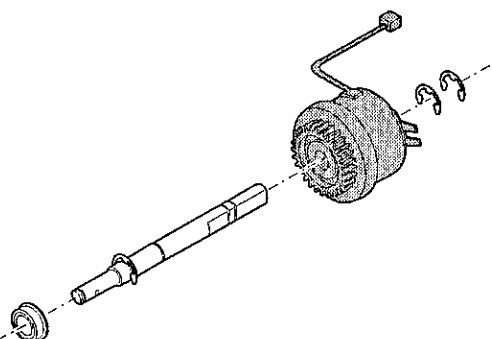


▲ a-2. Paper feed tray 3/4 paper transport clutch 2

- 1) Remove the 1/2 paper feed drive unit. (See "a. 1/2 paper feed drive unit" in this section)
- 2) Remove the 1/2 paper feed drive frame lower. (See "a-1. Vertical paper transport motor" in this section)
- 3) Disconnect the connector and remove the harness clamp, and remove the paper feed tray 3/4 paper transport clutch 2.

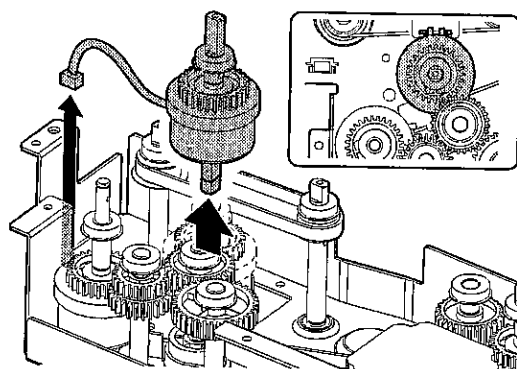


- 4) Remove the E-ring, and remove the paper feed tray 3/4 paper transport clutch 2.

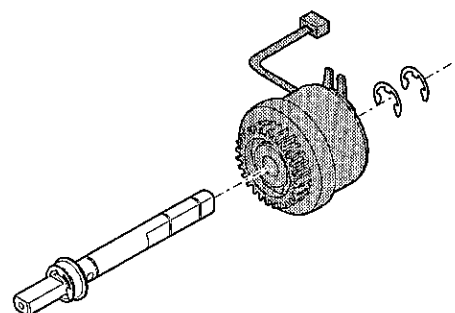


▲ a-3. Paper feed clutch (Paper feed tray 1)

- 1) Remove the 1/2 paper feed drive unit. (See "a. 1/2 paper feed drive unit" in this section)
- 2) Remove the 1/2 paper feed drive frame lower. (See "a-1. Vertical paper transport motor" in this section)
- 3) Disconnect the connector and remove the harness clamp, and remove the paper feed clutch (paper feed tray 1) unit.

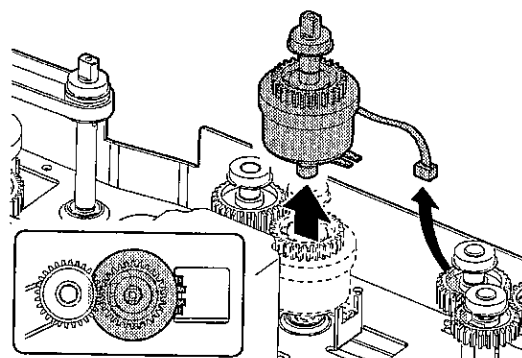


- 4) Remove the E-ring, and remove the paper feed clutch (paper feed tray 1).

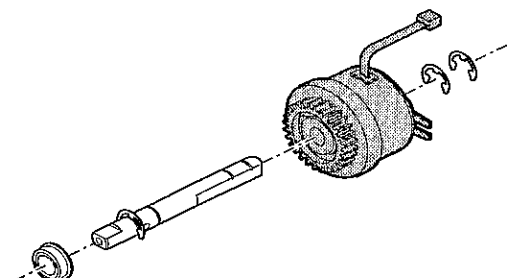


a-4. Horizontal paper transport clutch

- 1) Remove the 1/2 paper feed drive unit. (See "a. 1/2 paper feed drive unit" in this section)
- 2) Remove the 1/2 paper feed drive frame lower. (See "a-1. Vertical paper transport motor" in this section)
- 3) Disconnect the connector and remove the harness clamp, and remove the horizontal paper transport clutch.

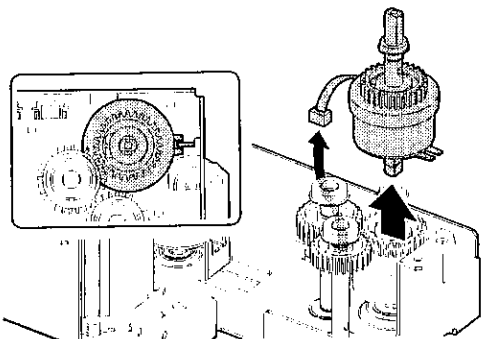


- 4) Remove the E-ring, and remove the horizontal paper transport clutch.

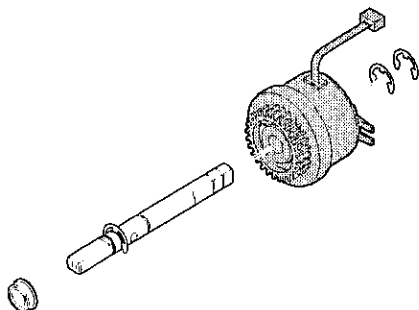


a-5. Paper feed clutch (Paper feed tray 2)

- 1) Remove the 1/2 paper feed drive unit. (See "a. 1/2 paper feed drive unit" in this section)
- 2) Remove the 1/2 paper feed drive frame lower. (See "a-1. Vertical paper transport motor" in this section)
- 3) Disconnect the connector and remove the harness clamp, and remove the paper feed clutch (paper feed tray 2).

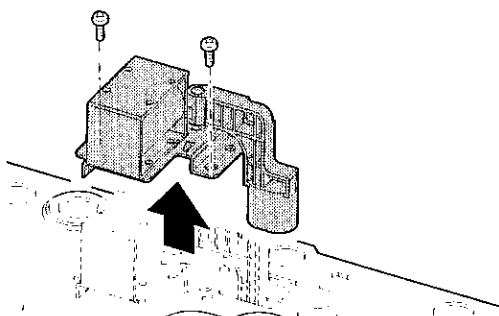


- 4) Remove the E-ring, and remove the paper feed clutch (paper feed tray 2).

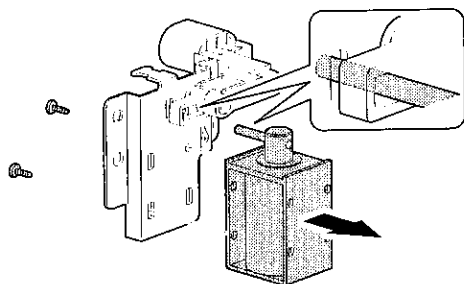


a-6. Paper pickup solenoid (Paper feed tray 2)

- 1) Remove the 1/2 paper feed drive unit. (See "a. 1/2 paper feed drive unit" in this section)
- 2) Remove the 1/2 paper feed drive frame lower. (See "a-1. Vertical paper transport motor" in this section)
- 3) Remove the paper pickup solenoid unit.



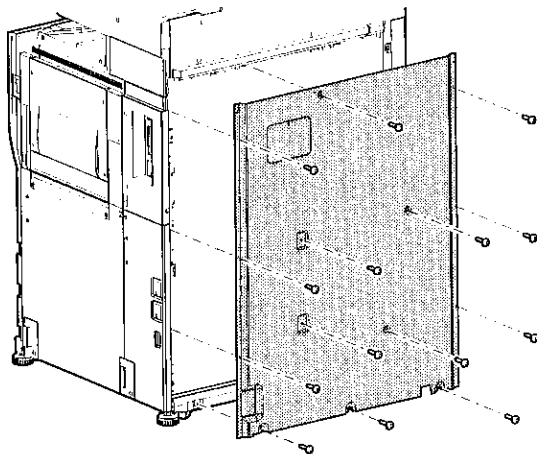
- 4) Remove the paper pickup solenoid.



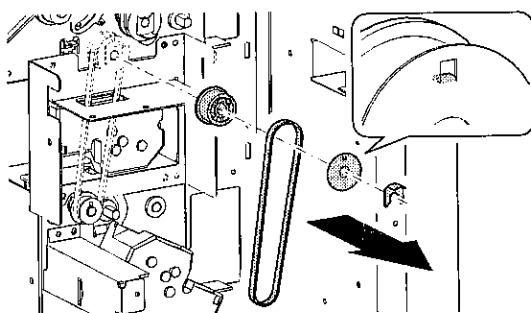
* When installing, check that the solenoid plunger is inserted in the arm.

b-1. Remove the paper tray lift-up motor (paper feed tray 1)

- 1) Remove the rear cabinet.

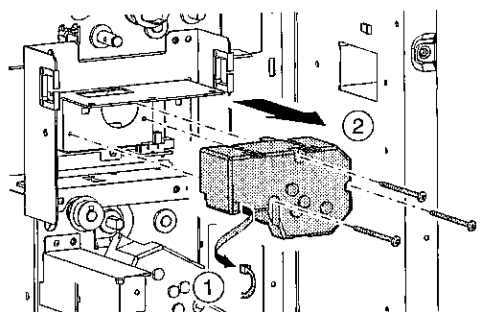


- 2) Remove the plastic E-ring, the belt holding sheet, the belt, and the pulley.

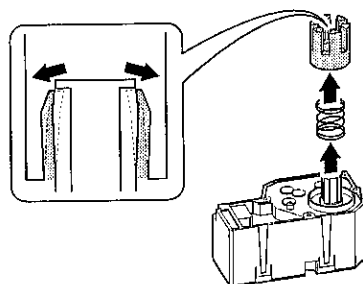


* When installing, be careful of the direction of the belt holding sheet.

- 3) Disconnect the connector, and remove the lift-up motor unit.

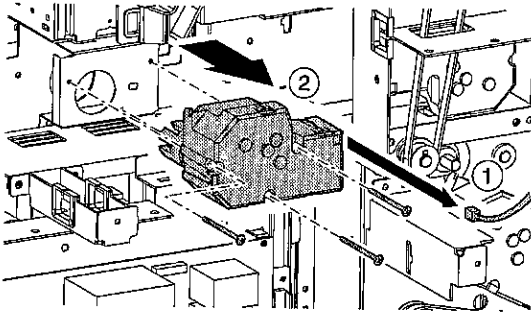


- 4) Release the pawl, and remove the lift-up coupling. Remove the lift-up spring from the paper tray lift-up motor.

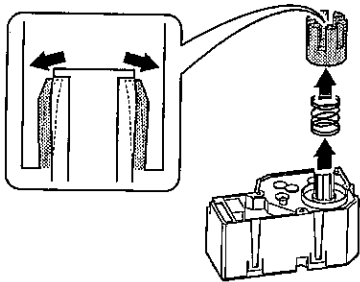


b-2. Paper tray lift-up motor (Paper feed tray 2)

- 1) Remove the high voltage PWB unit. (See "a. Manual paper feed drive unit" in the "[Manual paper feed drive section]")
- 2) Disconnect the connector, and remove the lift-up motor unit.

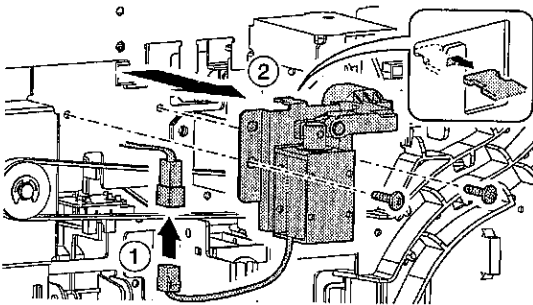


- 3) Release the pawl, and remove the lift-up coupling. Remove the lift-up spring from the lift-up motor.

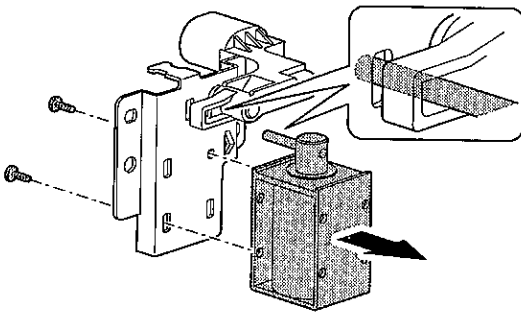


b-3. Paper pickup solenoid (Paper feed tray 2)

- 1) Remove the high voltage PWB unit. (See "a. Manual paper feed drive unit" in the "[Manual paper feed drive section]")
- 2) Disconnect the connector, and remove the paper pickup solenoid unit.



- 3) Remove the paper pickup solenoid.

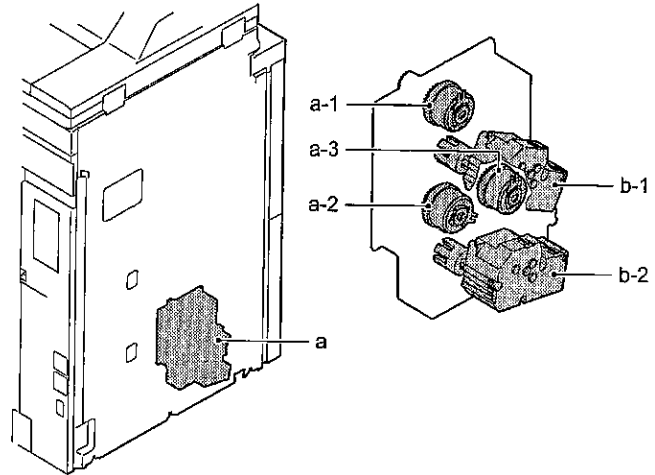


* When installing, check that the solenoid plunger is inserted in the arm.

[3/4 paper feed drive section]

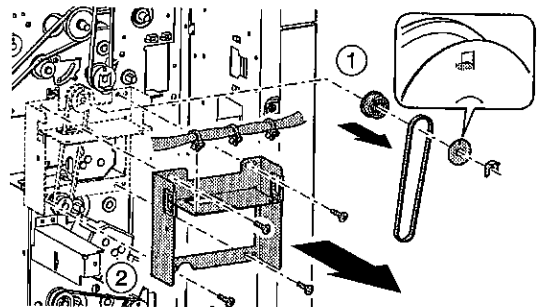
(Replacement parts)

| No. | Unit | Parts | |
|-----|---------------------------|-------|--|
| a | 3/4 paper feed drive unit | 1 | Paper feed clutch (Paper feed tray 3) |
| | | 2 | Paper feed clutch (Paper feed tray 4) |
| | | 3 | Paper feed tray 3/4 paper transport clutch 1 |
| b | Other | 1 | Paper tray lift-up motor (Paper feed tray 3) |
| | | 2 | Paper tray lift-up motor (Paper feed tray 4) |



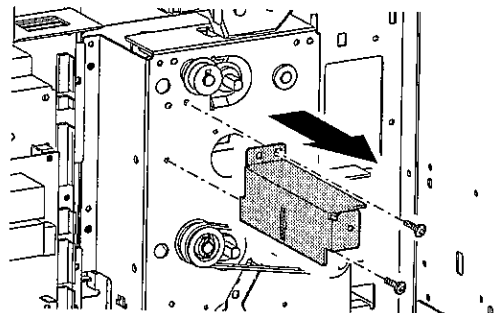
a. 3/4 paper feed drive unit

- 1) Remove the paper tray lift-up motor. (See "b-1. Paper tray lift-up motor (Paper feed tray 3)" in this section)
- 2) Remove the parts and remove the drive joint plate.

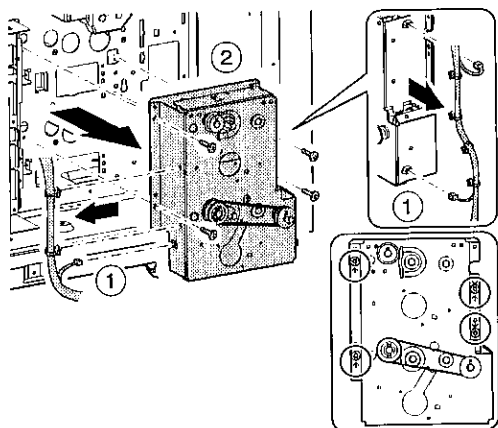


- * When installing, be careful of the direction of the belt holding sheet.
- * When installing, temporarily fix the 1/2 paper feed drive unit to the main unit, and install the drive joint plate. Then tighten the screw of the drive unit securely.

- 3) Remove the external outfit mounting plate.



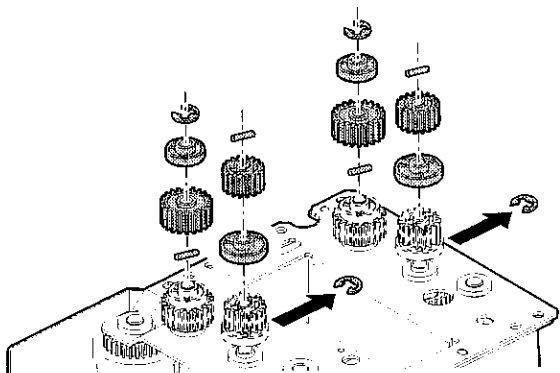
- 4) Disconnect the connector and remove the harness clamp. Remove the 3/4 paper feed drive unit.



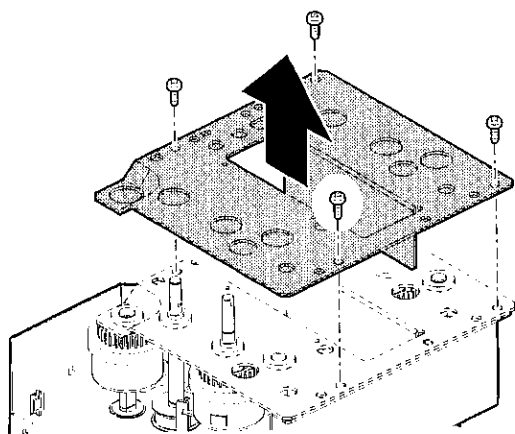
* Remove the screw which was indicated with the arrow mark.

a-1. Paper feed clutch (Paper feed tray 3)

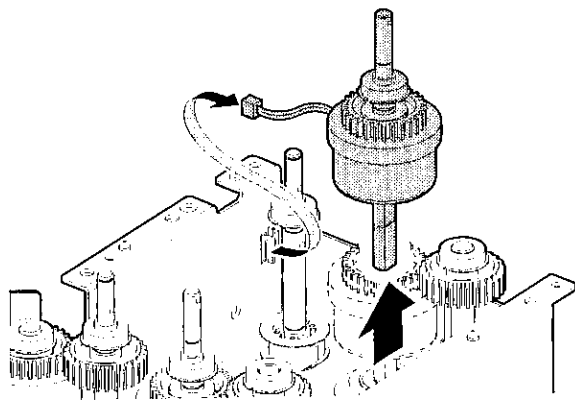
- 1) Remove the 3/4 paper feed drive unit. (See "a. 3/4 paper feed drive unit" in this section)
- 2) Remove the E-ring and remove the parts.



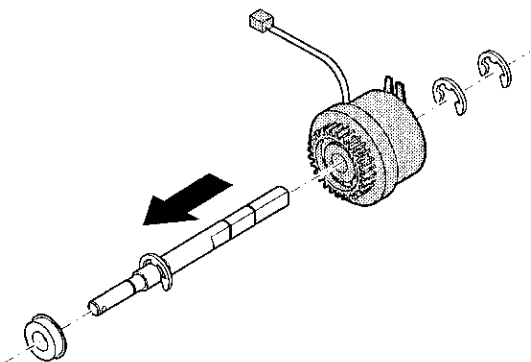
- 3) Remove the 3/4 drive frame lower.



- 4) Disconnect the connector, and remove the paper feed clutch unit.

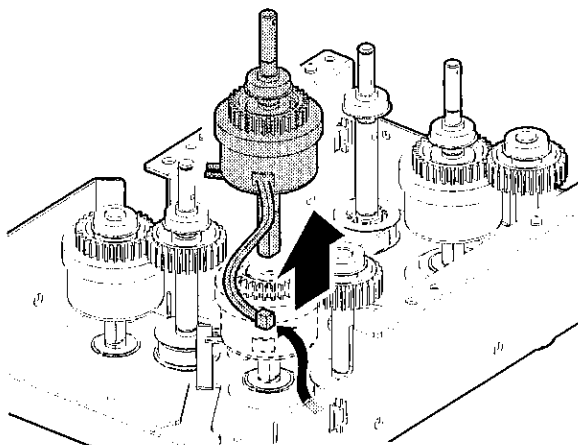


- 5) Remove the E-ring, and remove the paper feed clutch.

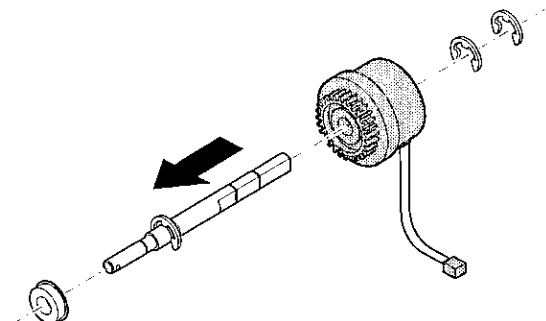


a-2. Paper feed clutch (Paper feed tray 4)

- 1) Remove the 3/4 paper feed drive unit. (See "a. 3/4 paper feed drive unit" in this section)
- 2) Remove the 3/4 drive frame lower. (See "a-1. Paper feed clutch (Paper feed tray 3)" in this section)
- 3) Disconnect the connector, and remove the paper feed clutch unit.

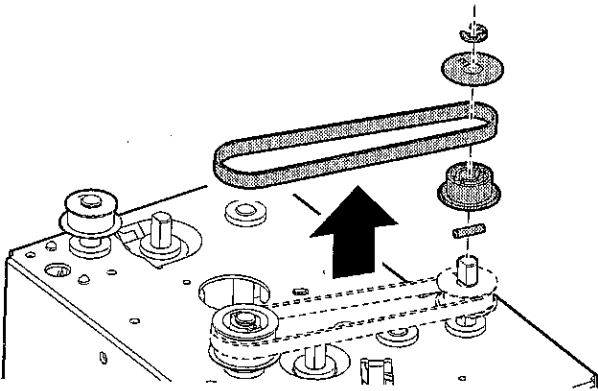


- 4) Remove the E-ring, and remove the paper feed clutch.

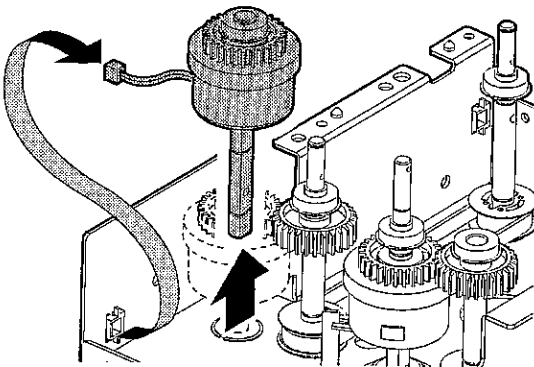


a-3. Paper feed tray 3/4 paper transport clutch 1

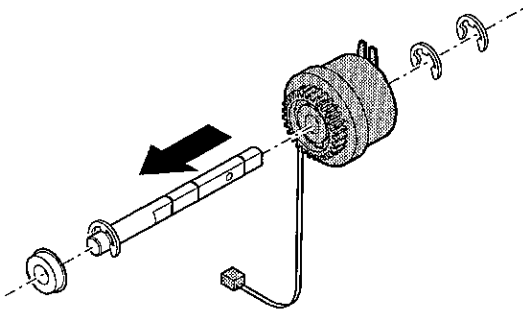
- 1) Remove the 3/4 paper feed drive unit. (See "a. 3/4 paper feed drive unit" in this section)
- 2) Remove the parts, and remove the belt.



- 3) Remove the 3/4 drive frame lower. (See "a-1. Paper feed clutch (Paper feed tray 3)" in this section)
- 4) Disconnect the connector, and remove the paper feed tray 3/4 paper transport clutch 1 unit.



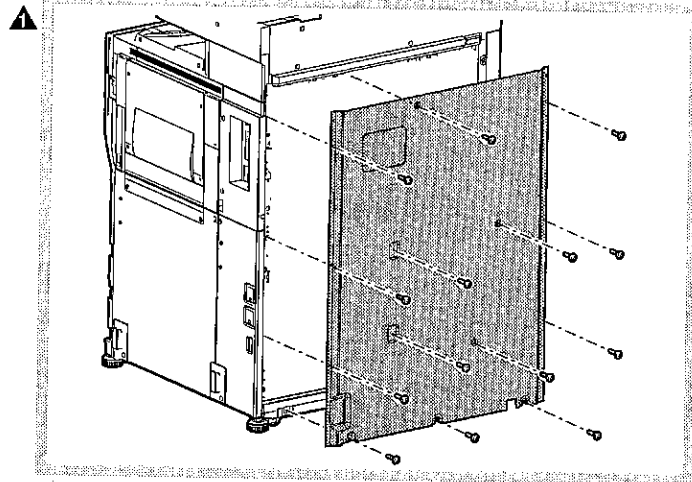
- 5) Remove the E-ring, and remove the paper feed tray 3/4 and the paper transport clutch 1.



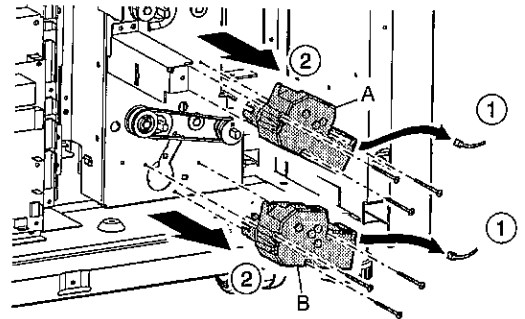
b-1. Paper tray lift-up motor (Paper feed tray 3)

b-2. Paper tray lift-up motor (Paper feed tray 4)

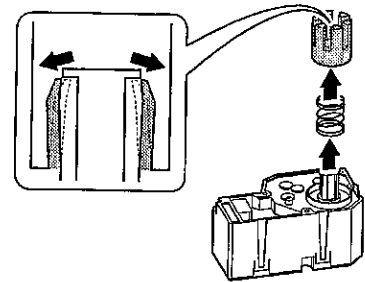
- 1) Remove the rear cabinet.



- 2) Disconnect the connector, and remove the paper tray lift-up motor (paper feed tray 3) (A) and the paper tray lift-up motor (Paper feed tray 4) (B).



- 3) Release the pawl, and remove the lift-up coupling. Remove the lift-up spring from the lift-up motor.



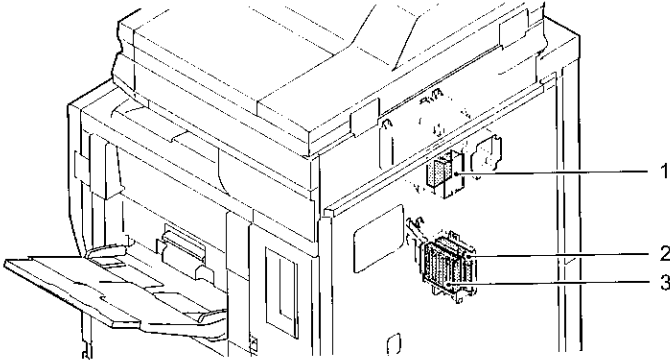
9. Filters

A. Maintenance and parts replacement

(1) Maintenance list

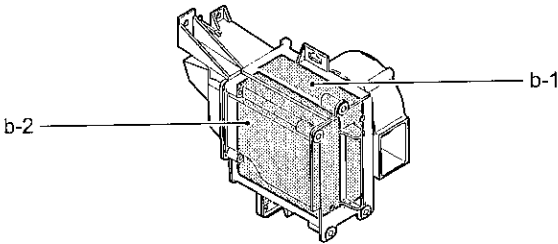
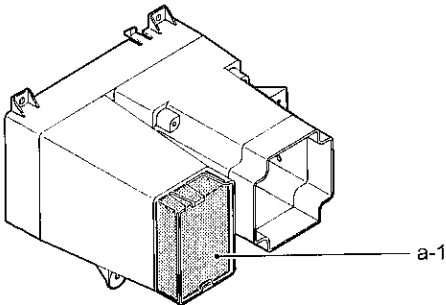
X: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| Unit name | No. | Part name | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|-----------|-----|-----------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------|
| | | | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Filters | 1 | Ozone filter | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 2 | DV toner filter | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | Toner filter | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |

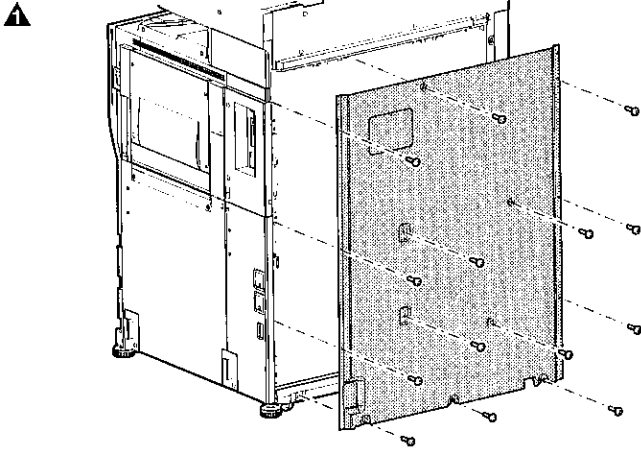


(2) Maintenance and parts replacement
(Replacement parts)

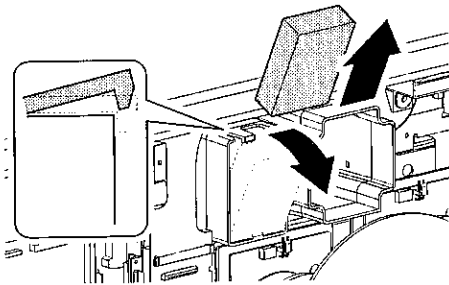
| No. | Parts |
|-----|-------------------|
| a | 1 Ozone filter |
| | 2 DV ozone filter |
| | 3 Toner filter |



a-1. Ozone filter
1) Remove the rear cabinet.



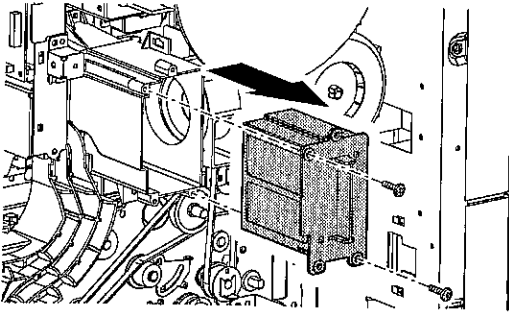
2) Release the pawl, and remove the ozone filter.



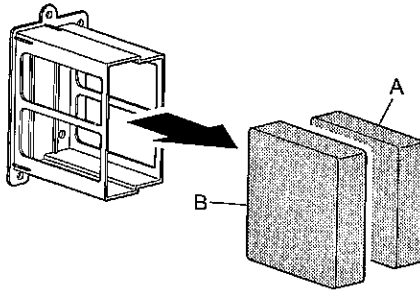
▲ a-2. DV ozone filter

a-3. Toner filter

- 1) Remove the rear cabinet. (See "a-1. Ozone filter" in this section)
- 2) Remove the DV filter box.



▲ 3) Remove the DV ozone filter (A) and the toner filter (B).



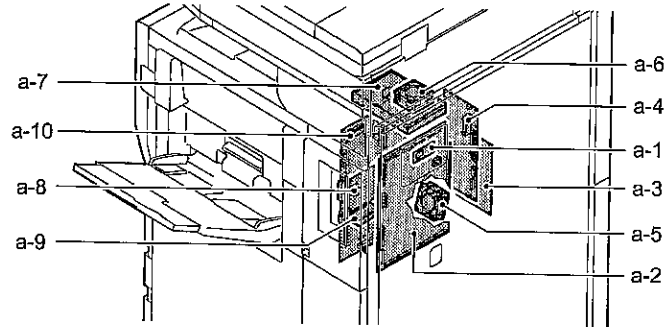
10. PWB section

A. Maintenance and parts replacement

(2) Maintenance and parts replacement

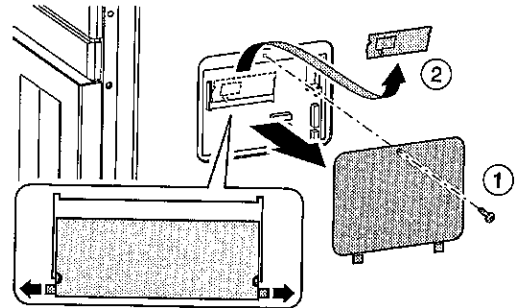
(Replacement parts)

| No. | Parts |
|-----|--------------------------------|
| a | 1 PCU FLASH PWB |
| | 2 PCU PWB |
| | 3 Driver PWB |
| | 4 Mother PWB |
| | 5 Controller cooling fan motor |
| | 6 HDD cooling fan motor |
| | 7 HDD |
| | 8 Soft NIC PWB |
| | 9 MFP FLASH ROM PWB |
| | 10 MFP controller PWB |



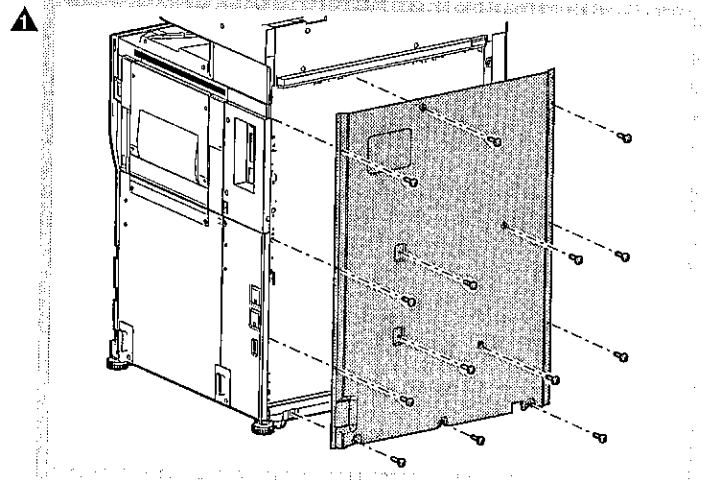
a-1. PCU FLASH PWB

- 1) Remove the ROM cover. Release the lock and remove the PCU Flash PWB.

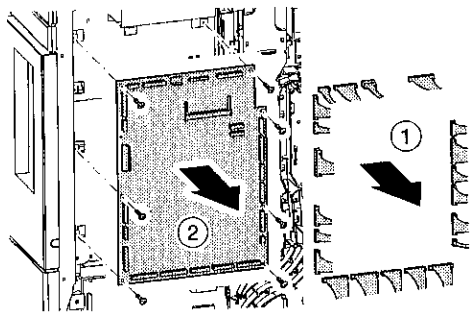


a-2. PCU PWB

- 1) Remove the rear cabinet.

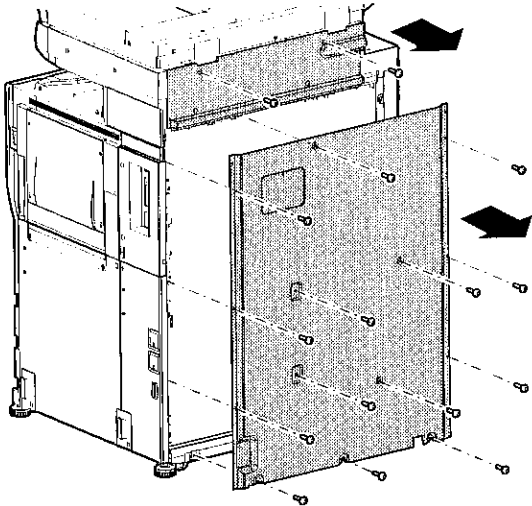


- 2) Disconnect the connector, and remove the PCU PWB.

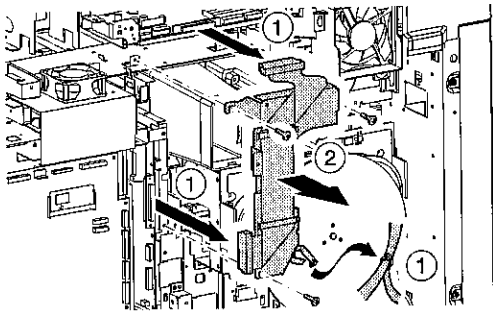


a-3. Driver PWB

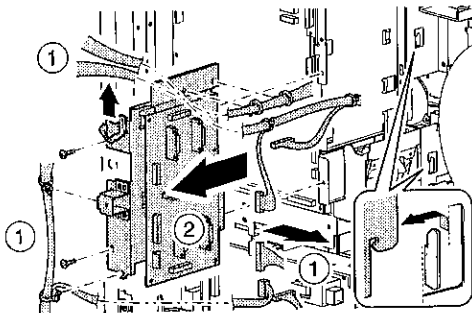
- 1) Remove the rear cabinet and the rear cabinet upper.



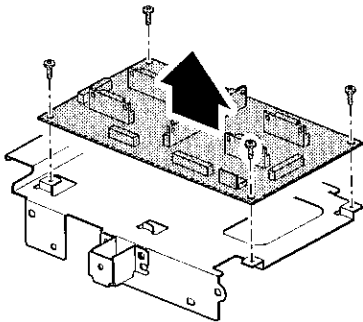
- 2) Disconnect the connector, and remove the harness clamp and the SCAN harness cover.



- 3) Remove the connector and the harness clamp. Remove the driver PWB unit.

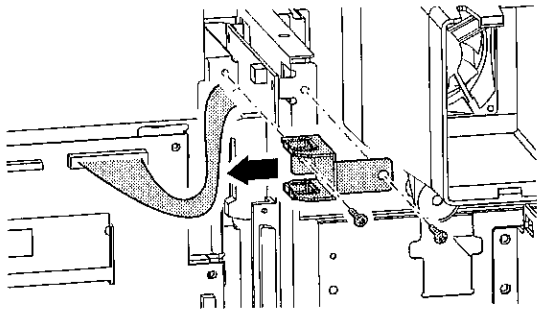


- 4) Remove the driver PWB.

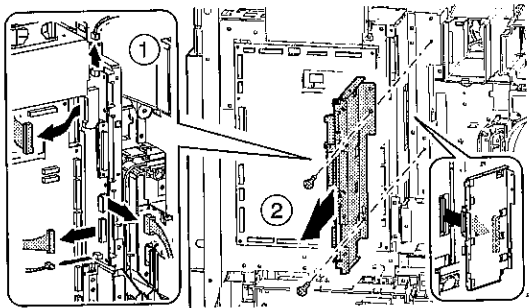


a-4. Mother PWB

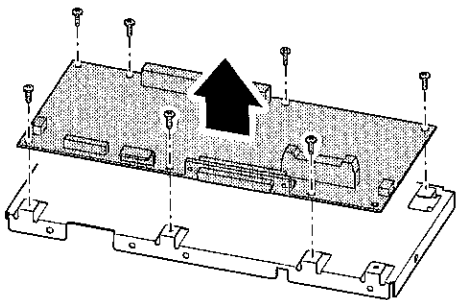
- 1) Remove the driver PWB unit. (See "a-3. Driver PWB" in this section)
2) Remove the harness, and remove the mother PWB stay.



- 3) Disconnect the connector and remove the mother PWB unit.

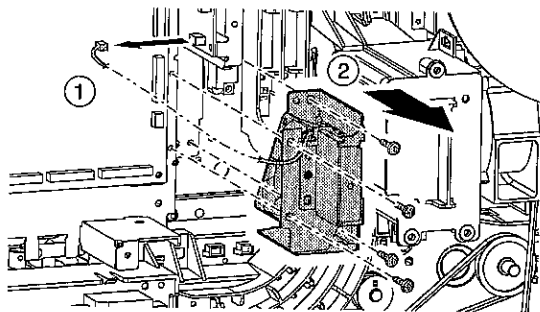


- 4) Remove the mother PWB.

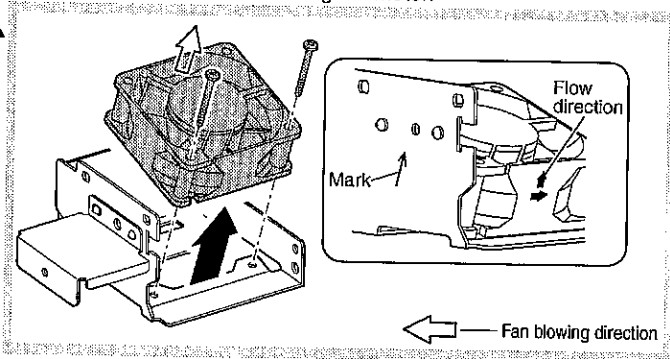


a-5. Controller cooling fan motor

- 1) Remove the driver PWB unit. (See "a-3. Driver PWB" in this section)
- 2) Disconnect the connector and remove the harness clamp. Remove the controller cooling fan motor unit.

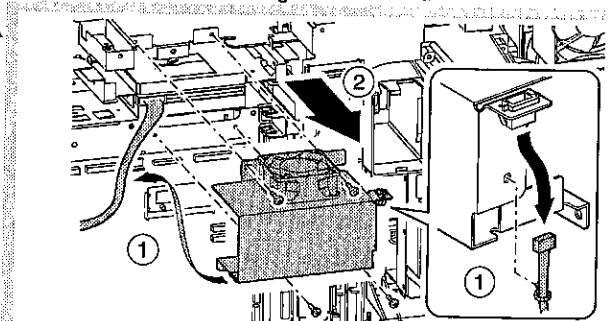


- 3) Remove the controller cooling fan motor.

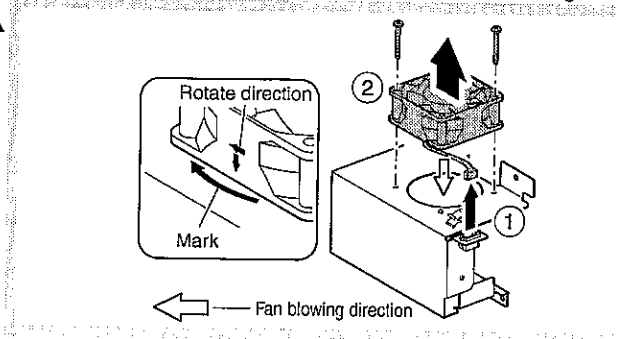


a-6. HDD cooling fan motor

- 1) Remove the rear cabinet and the rear cabinet upper. (See "a-3. Driver PWB" in this section)
- 2) Disconnect the connector, and remove the harness clamp. Remove the HDD cooling fan motor unit.

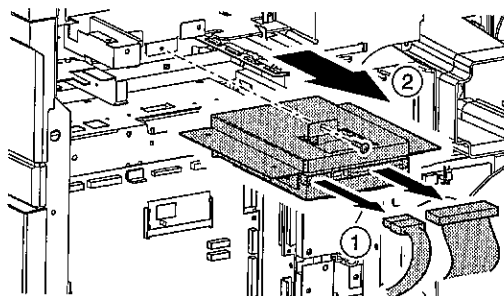


- 3) Disconnect the connector, and remove the HDD cooling fan motor.

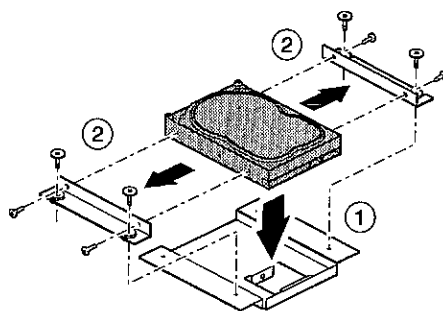


a-7. HDD

- 1) Remove the cooling fan motor unit. (See "a-5. Controller cooling fan motor" in this section)
- 2) Disconnect the connector, and remove the HDD unit.

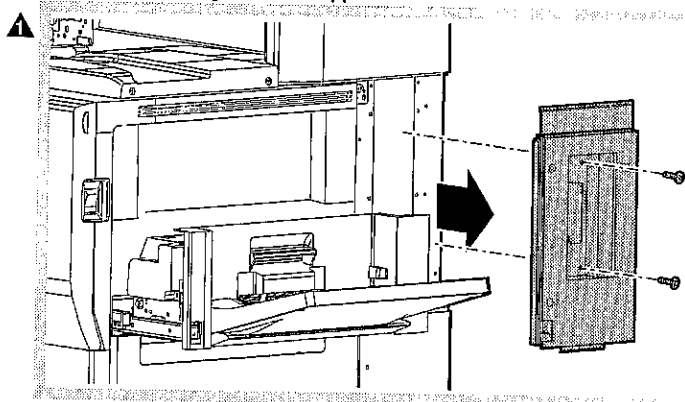


- 3) Remove the HDD slide plate, and remove the HDD mounting plate from the HDD.

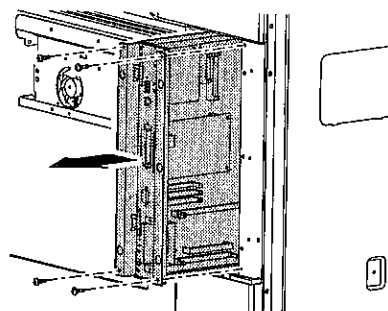


a-8. Soft NIC PWB

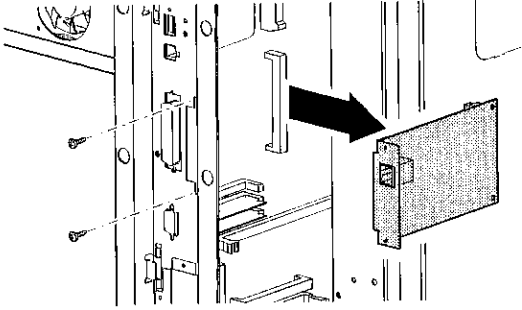
- 1) Remove the right cabinet upper.



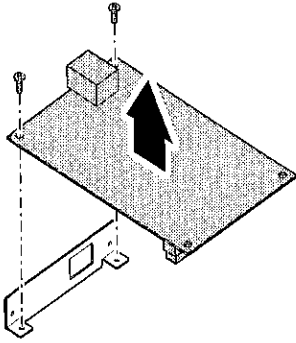
- 2) Pull out the NIC control unit.



- 3) Remove the soft NIC PWB unit.

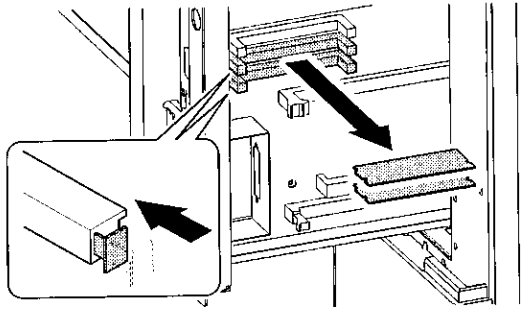


- 4) Remove the soft NIC PWB angle from the soft NIC PWB.



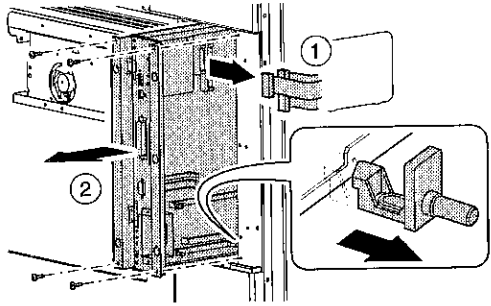
a-9. MFP FLASH ROM PWB

- 1) Pull out the NIC control unit. (See "a-8. Soft NIC PWB" in this section)
- 2) Release the lock, and remove the MFP Flash PWB.

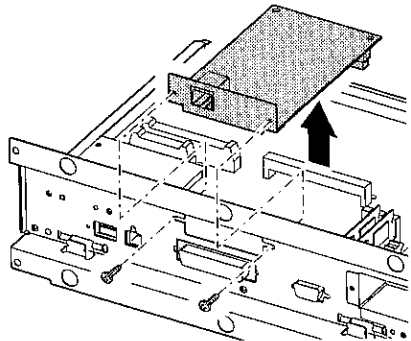


a-10. MFP controller PWB

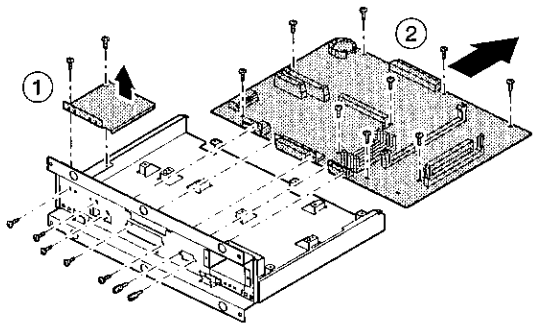
- 1) Remove the manual feed cover F, the right cabinet middle, and the right cabinet upper. (See "a-8. Soft NIC PWB" in this section)
- 2) Pull out the NIC control unit, and remove the flat cable. Release the lock, and remove the NIC control unit.



- 3) Remove the Soft NIC PWB unit.



- 4) Remove the PWB protection plate. Remove the MFP controller PWB.



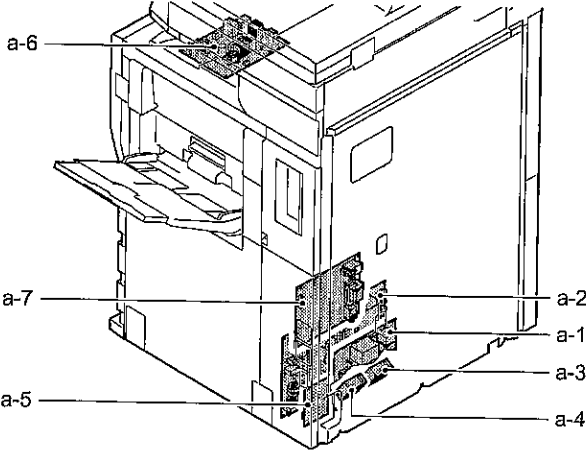
11. Power section

A. Maintenance and parts replacement

(1) Maintenance and parts replacement

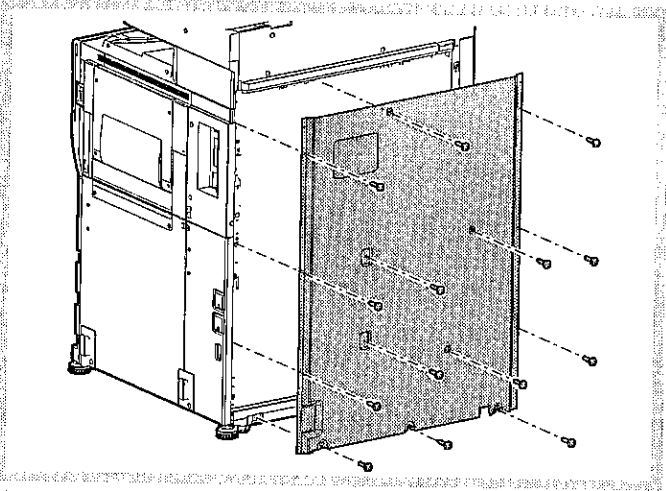
(Replacement parts)

| No. | Unit | Parts |
|-----|------|---------------------------------|
| a | | 1 AC power PWB |
| | | 2 DC main power PWB |
| | | 3 Power cooling fan motor 1 |
| | | 4 Power cooling fan motor 2 |
| | | 5 Dehumidifier heater relay PWB |
| | | 6 DC sub power PWB |
| | | 7 High voltage PWB (MC/DV/TC) |

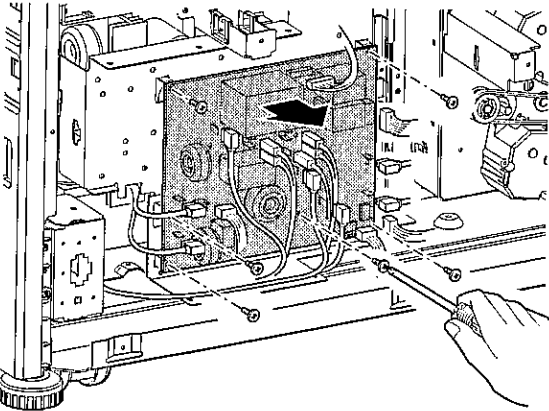


a-1. AC power PWB

1) Remove the rear cabinet.



2) Disconnect the connector, and remove the AC power PWB.

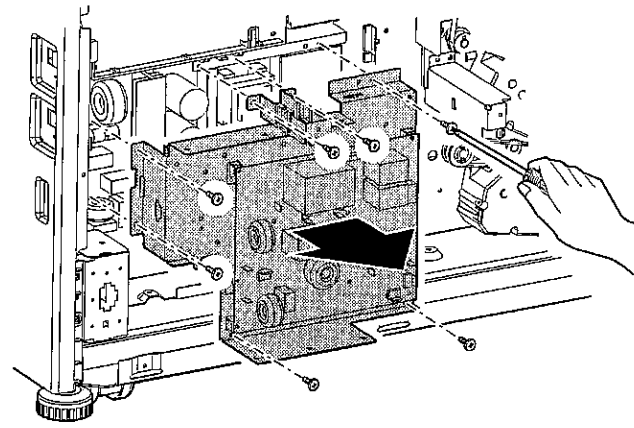


a-2. DC main power PWB

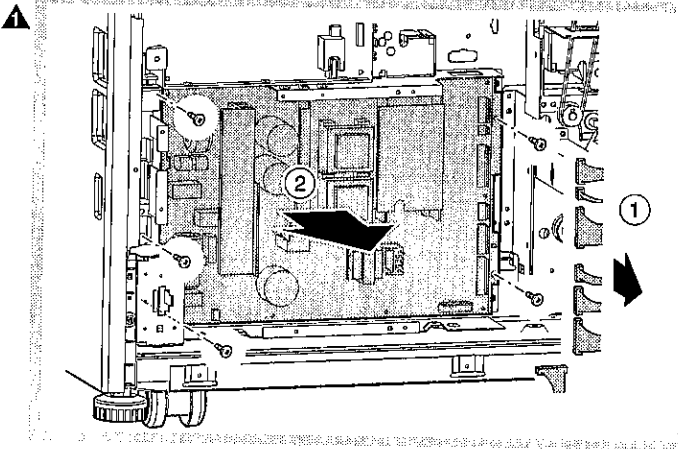
▲ (Method 1)

1) Remove the rear cabinet. (See "a-1. AC power PWB" in this section)

▲ 2) Disconnect the connector and remove the harness clamp. Remove the AC power PWB unit.



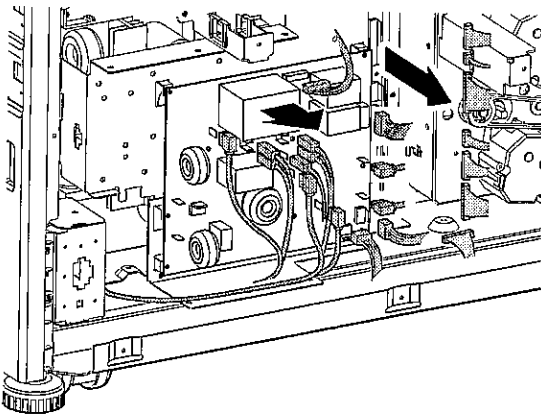
3) Disconnect the connector and remove the DC main power PWB.



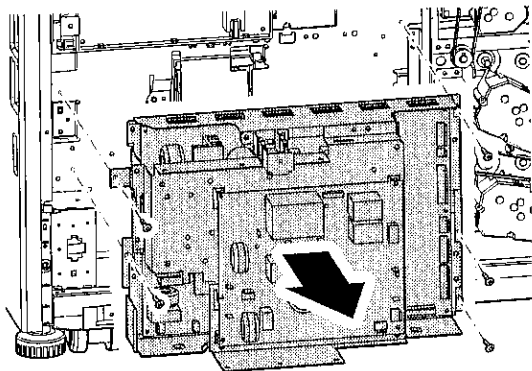
▲ (Method 2)

1) Remove the rear cabinet. (See "a-1. AC power PWB" in this section)

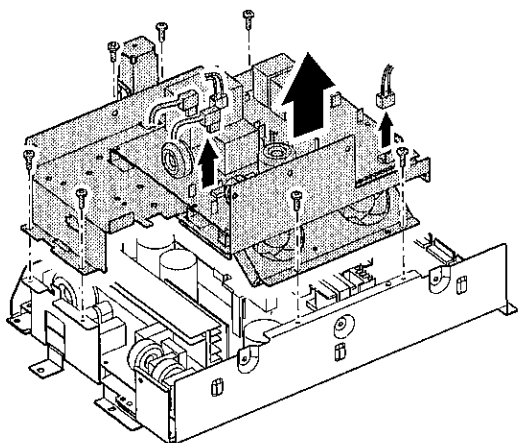
2) Disconnect the connector.



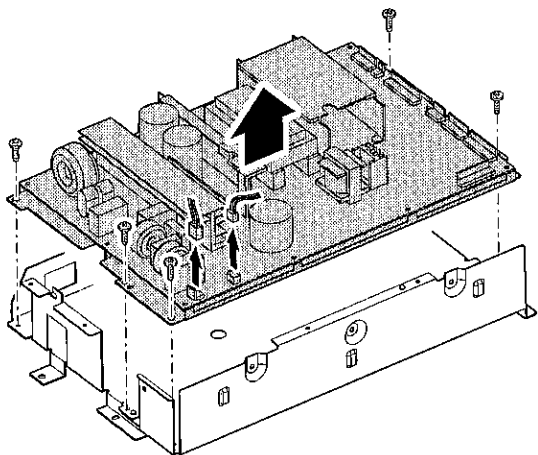
- ▲ 3) Remove the AC/DC power unit.



- 4) Remove the AC power PWB unit.



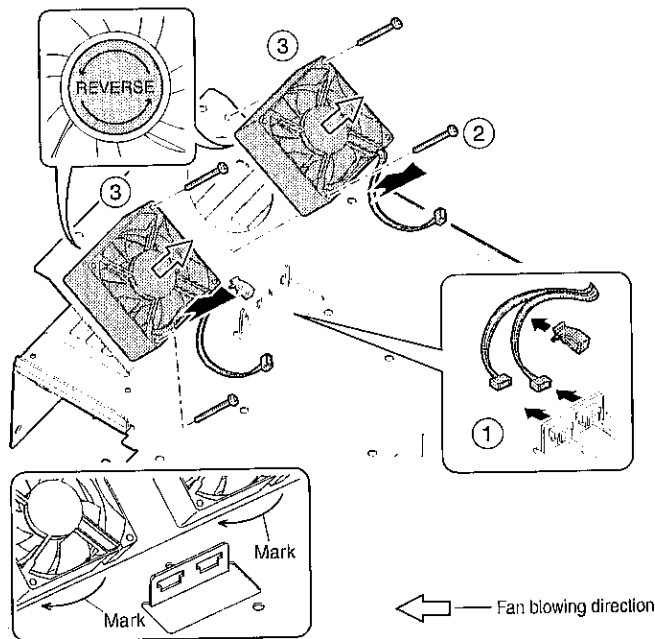
- 5) Remove the DC power PWB unit.



a-3. Power cooling fan motor 1

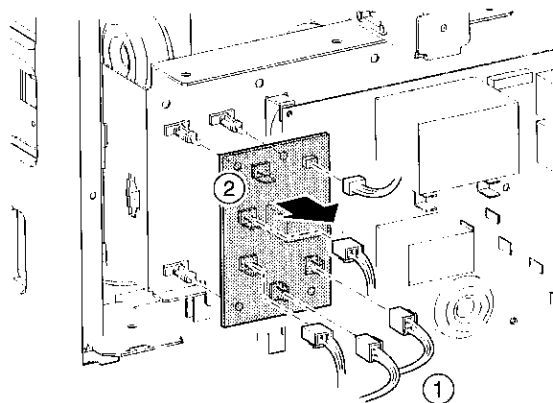
a-4. Power cooling fan motor 2

- 1) Remove the rear cabinet. (See "a-1. AC power PWB" in this section)
- 2) Disconnect the connector, and remove the AC power PWB unit. (See "a-1. AC power PWB" in this section)
- 3) Disconnect the connector and remove the harness clamp. Remove the power cooling fan motors 1/2.



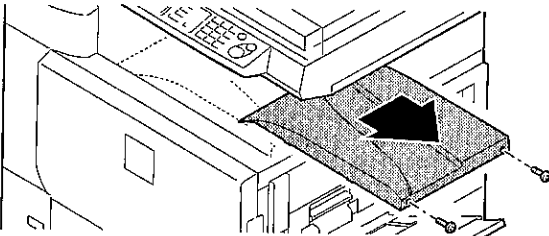
a-5. Dehumidifier heater relay PWB

- 1) Remove the rear cabinet. (See "a-1. AC power PWB" in this section)
- 2) Disconnect the connector and remove the supporter. Remove the dehumidifier heater relay PWB.

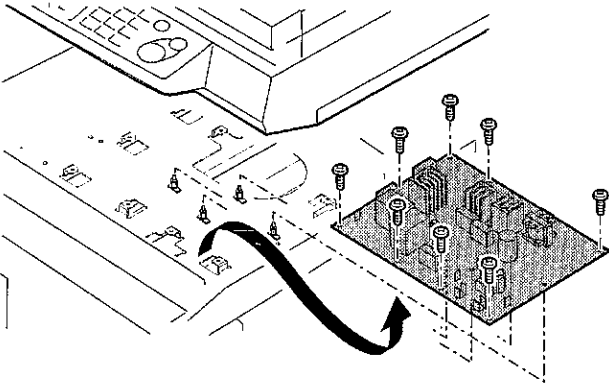


a-6. DC sub power PWB

- 1) Remove the paper exit tray cabinet.

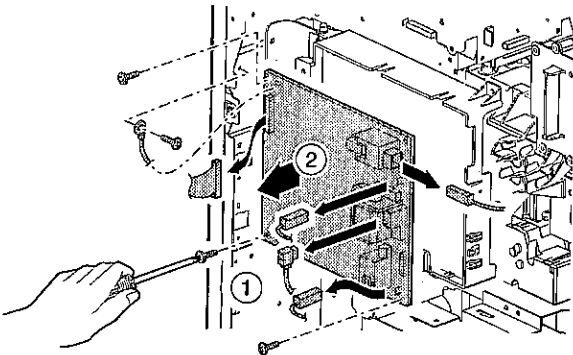


- 2) Disconnect the connector and remove the supporter. Remove the DC sub power PWB.



a-7. High voltage PWB (MC/DV/TC)

- 1) Remove the rear cabinet. (See "a-1. AC power PWB" in this section)
- 2) Disconnect the connector and remove the earth terminal. Remove the high voltage PWB.



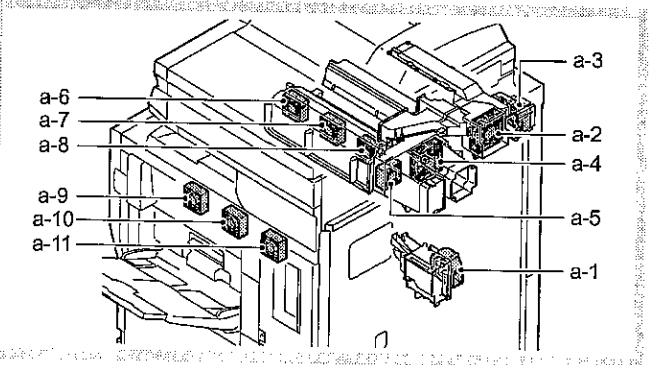
12. Fan motors

A. Maintenance and parts replacement

(1) Maintenance and parts replacement

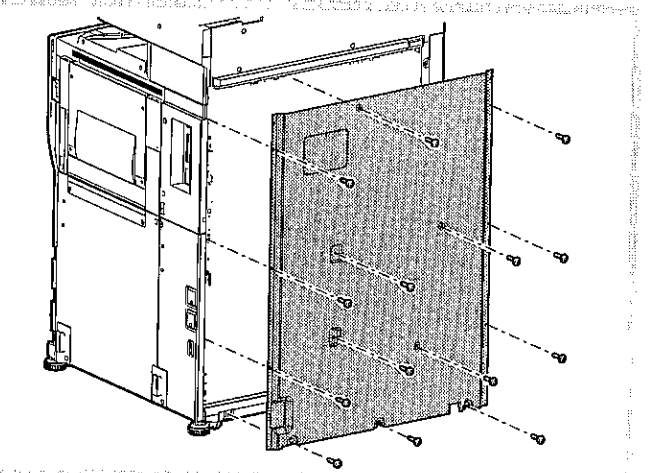
(Replacement parts)

| No. | Unit | Parts |
|-----|------|--------------------------------|
| a | | 1 Developing cooling fan motor |
| | | 2 Paper cooling fan motor 2 |
| | | 3 Fusing cooling fan motor 2 |
| | | 4 Process exhaust fan motor 5 |
| | | 5 Process exhaust fan motor 4 |
| | | 6 Process exhaust fan motor 1 |
| | | 7 Process exhaust fan motor 2 |
| | | 8 Process exhaust fan motor 3 |
| | | 9 Process cooling fan 1 |
| | | 10 Process cooling fan 2 |
| | | 11 Process cooling fan 3 |

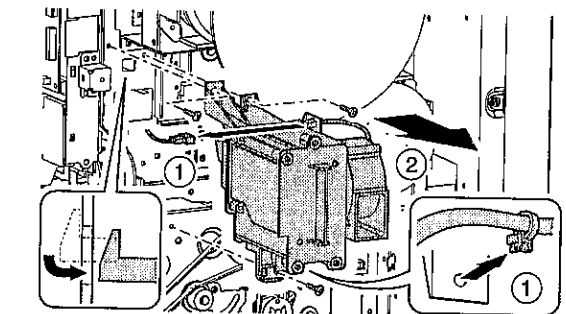


a-1. Developing cooling fan motor

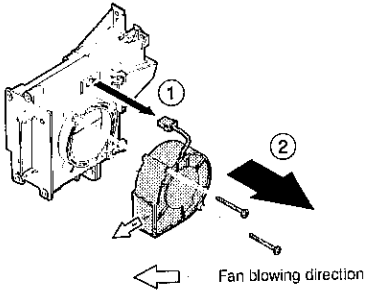
- 1) Remove the rear cabinet.



- 2) Disconnect the connector and remove the harness clamp. Remove the DV fan unit.

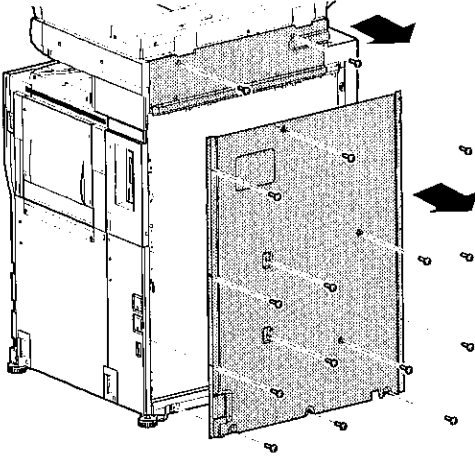


- 3) Disconnect the connector, and remove the DV fan.

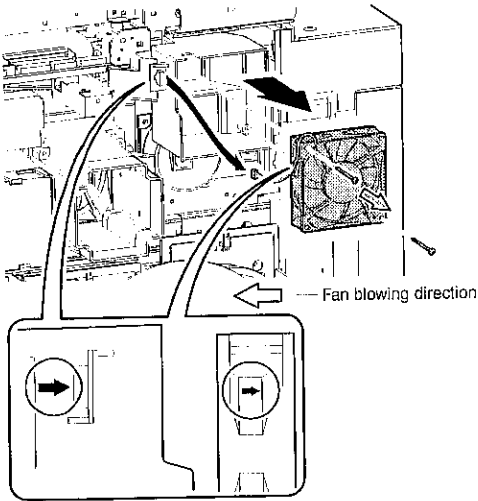


a-2. Paper cooling fan motor 2

- 1) Remove the rear cabinet and the rear cabinet upper.



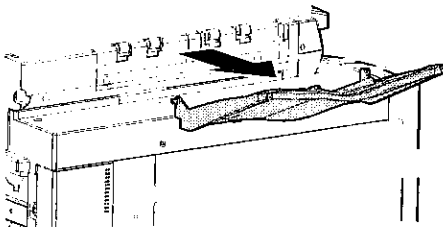
- 2) Disconnect the connector, and remove the paper cooling fan motor.



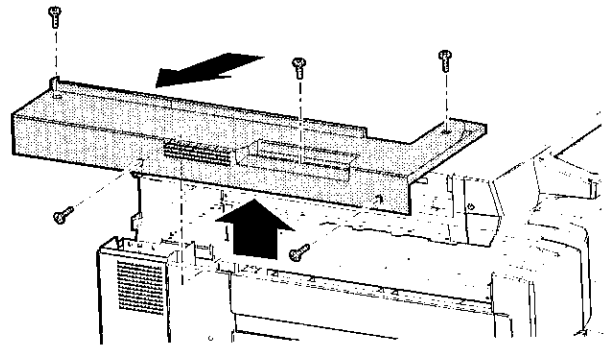
NOTE: When installing, arrange so that the arrow mark on the side of the duct faces in the same direction with the arrow mark on the side of the fan.

a-3. Fusing cooling fan motor 2

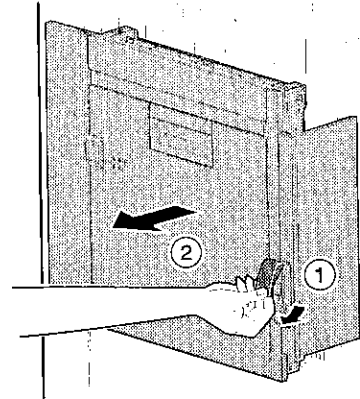
- 1) Remove the rear cabinet. (See "a-1. Developing cooling fan motor" in this section)
2) Remove the tray.



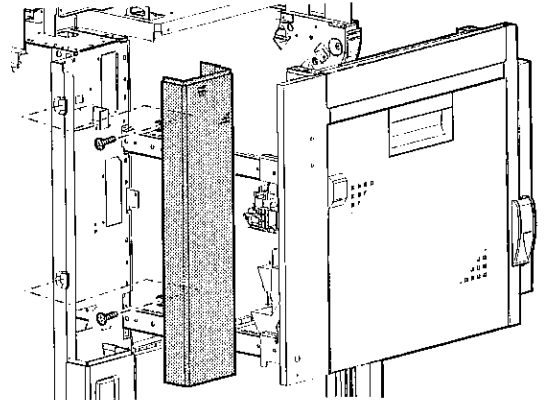
- 3) Remove the left cover cabinet.



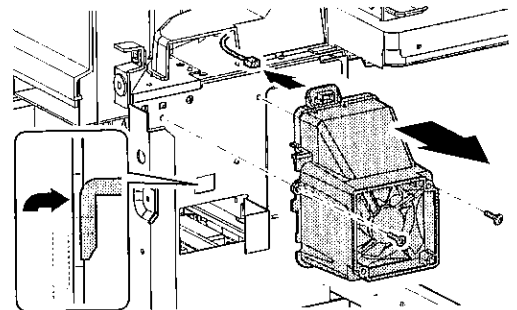
- 4) Open the left door.



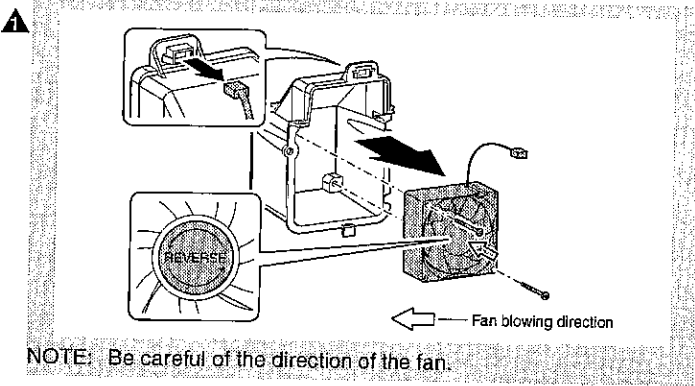
- 5) Remove the left cabinet upper.



- 6) Disconnect the connector, and remove the paper exit rear duct unit.

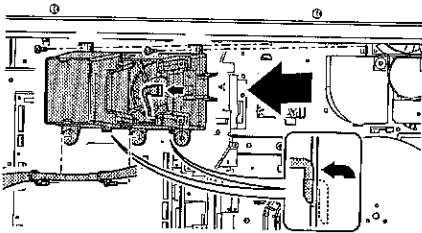


- 7) Disconnect the connector, and remove the fusing cooling fan motor.

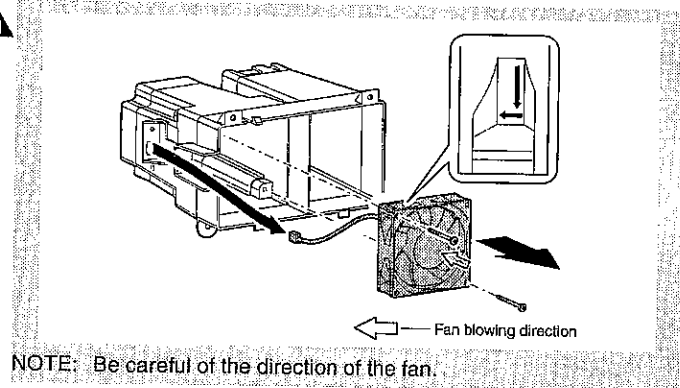


a-4. Process exhaust fan motor 5

- 1) Remove the rear cabinet. (See "a-1. Developing cooling fan motor" in this section)
- 2) Disconnect the connector and remove the harness clamp. Remove the sub duct unit.

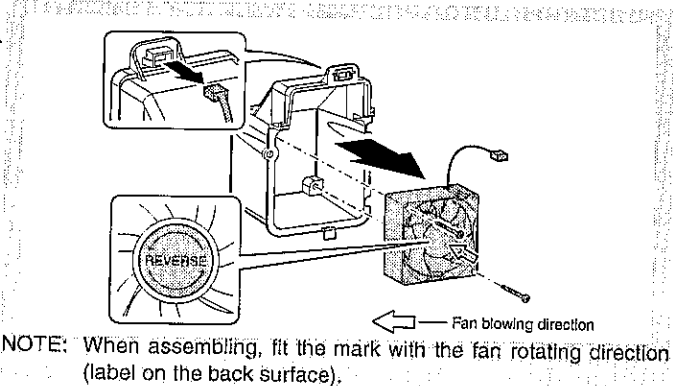


- 3) Disconnect the connector and remove the process exhaust fan motor 5.



a-5. Process exhaust fan motor 4

- 1) Remove the rear cabinet. (See "a-1. Developing cooling fan motor" in this section)
- 2) Disconnect the connector and remove the harness clamp. Remove the sub duct unit. (See "a-4. Process exhaust fan motor 5" in this section)
- 3) Disconnect the connector and remove the process exhaust fan motor 4.

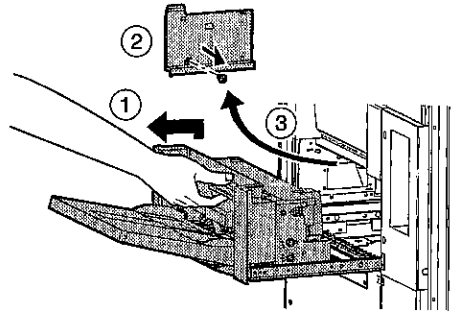


a-6. Process exhaust fan motor 1

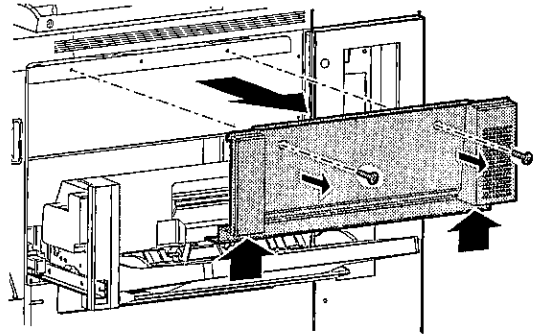
a-7. Process exhaust fan motor 2

a-8. Process exhaust fan motor 3

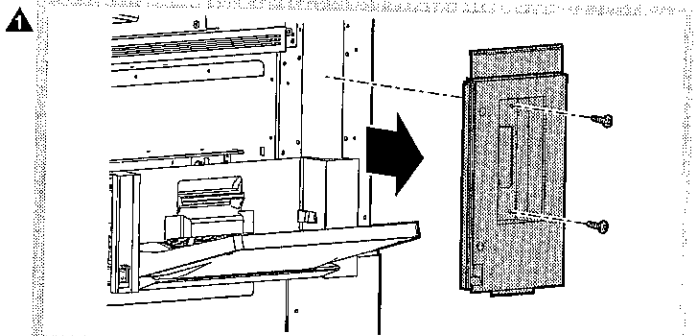
- 1) Remove the SPF unit. (See "6. Fusing section" in the "a. SPF unit")
- 2) Remove the scanner unit. (See "a. Scanner unit" in the "5. Scanner section")
- 3) Pull out the multi paper feed tray unit, and remove the manual paper feed cover F.



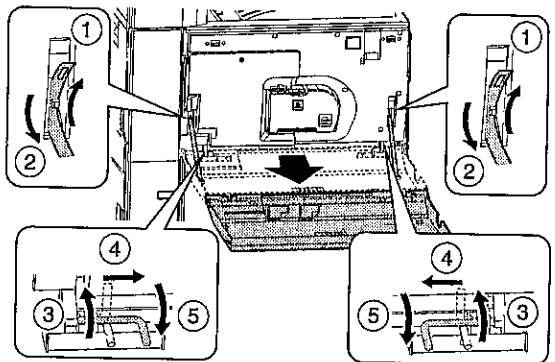
- 4) Remove the right cabinet middle.



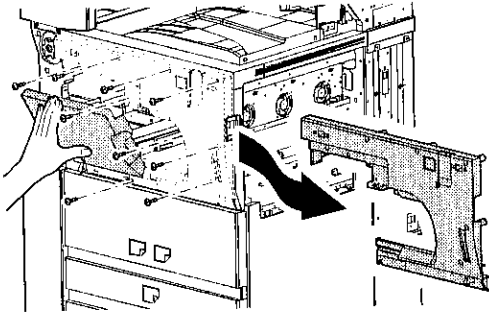
- 5) Remove the right cabinet upper.



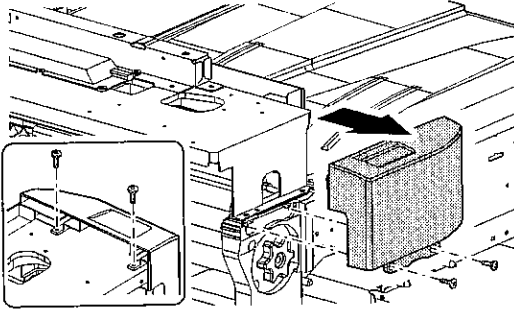
- 6) Remove the front cabinet band, and remove the 3 front cabinet.



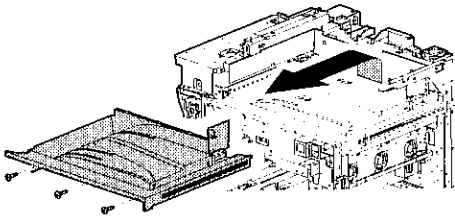
- 7) Remove the toner bottle. (See "a. Toner bottle unit" in "[Toner hopper and toner bottle section]")
- 8) Remove the toner hopper unit. (See "b. Toner hopper unit" in "[Toner hopper and toner bottle section]")
- 9) Remove the developing unit. (See "a. Developing unit" in the "[Developer tank section]")
- 10) Remove the process unit. (See "a. Process unit" in the "[OPC drum section]")
- 11) Raise the process DV cover diagonally, and remove the front right cover.



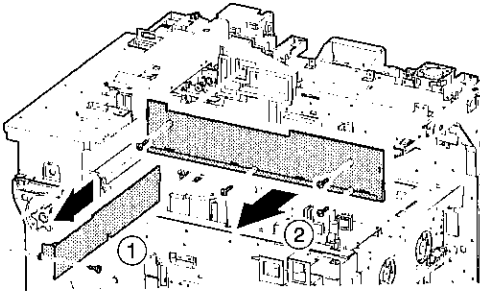
- 12) Remove the front cabinet upper.



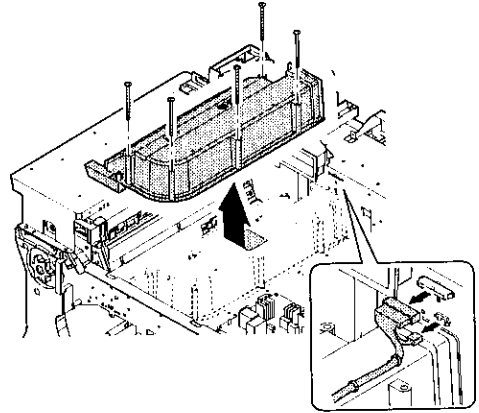
- 13) Remove the paper exit tray cabinet unit.



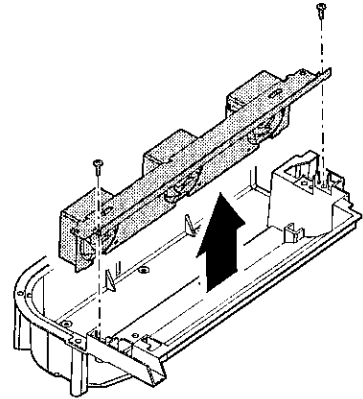
- 14) Remove the paper exit port cabinet, and remove the paper exit tray cabinet C.



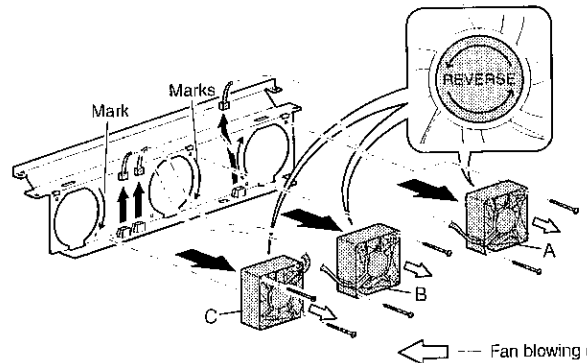
- 15) Disconnect the connector and remove the harness clamp. Remove the main duct unit.



- 16) Remove the fan unit.



- 17) Disconnect the connector and remove the process exhaust fan motor 1 (A), 2 (A), and 3 (C).



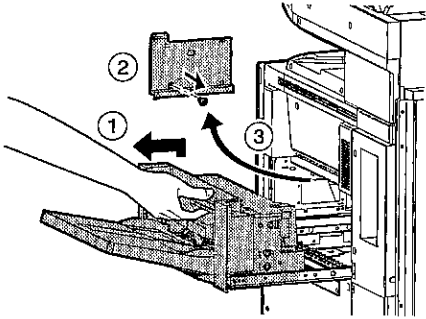
NOTE: When assembling, fit the mark with the fan rotating direction (label on the back surface).

a-9. Process cooling fan motor 1 (LSU, process section)

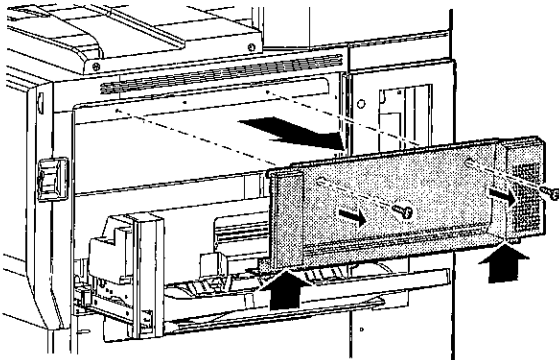
a-10. Process cooling fan motor 2 (LSU, process section)

a-11. Process cooling fan motor 3 (LSU, process section)

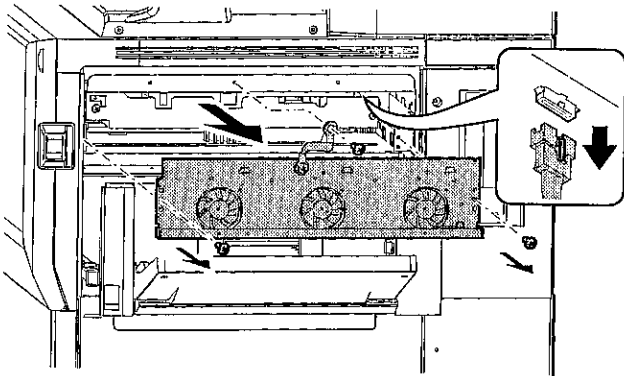
- 1) Pull out the multi paper feed tray, and remove the manual paper feed cover F.



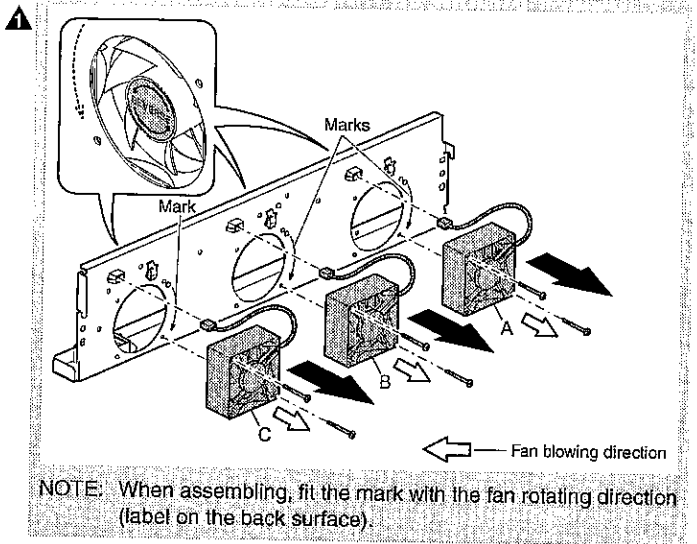
- 2) Pushing the lower part, remove the right cabinet center.



- 3) Disconnect the connector, and remove the process cooling fan unit.



- 4) Disconnect the connector, and remove the process cooling fan motors 1 (A), 2 (B), and 3 (C).



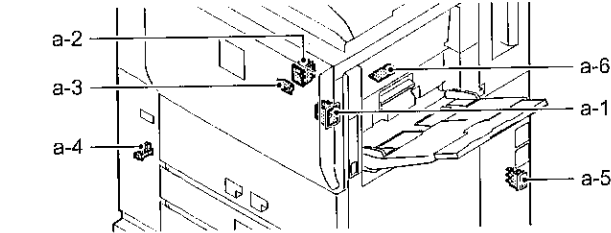
13. Sensors and switches

A. Parts replacement

(1) Parts replacement

(Replacement parts)

| No. | Unit | Parts |
|-----|------|----------------------------------|
| a | | 1 Power switch |
| | | 2 Main power switch |
| | | 3 Front door open/close detector |
| | | 4 Left door open/close detector |
| | | 5 Dry heater switch |
| | | 6 Machine temperature sensor |

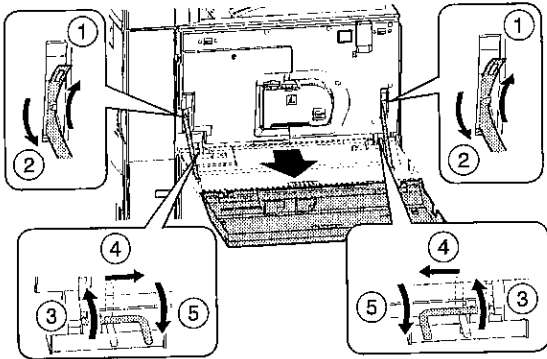


a-1. Power switch

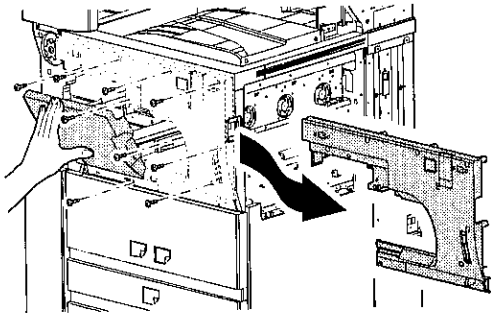
a-2. Main power switch

a-3. Front door open/close detector

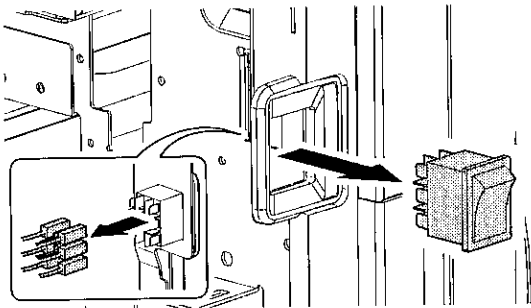
1) Remove the front cabinet band, and remove the 3 front cabinet.



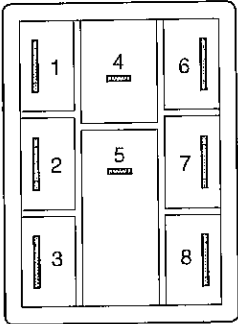
- 2) Remove the toner bottle. (See "a. Toner bottle unit" in "[Toner hopper and toner bottle section]")
- 3) Remove the toner hopper unit. (See "b. Toner hopper unit" in "[Toner hopper and toner bottle section]")
- 4) Remove the developing unit. (See "a. Developing unit" in the "[Developer tank section]")
- 5) Remove the process unit. (See "a. Process unit" in the "[OPC drum section]")
- 6) Raise the process DV cover diagonally, and remove the front right cover.



7) Disconnect the connector, and remove the power switch.



NOTE: When installing, be careful of the connector connecting position and the installing direction. Also be careful not to break the SW pawl.

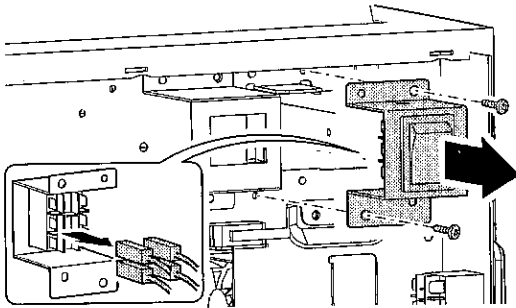


Power switch (Connector surface)

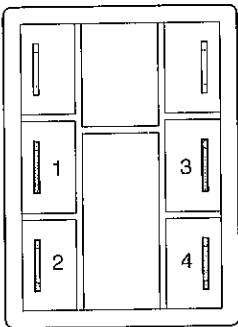
[Connector connecting position]

| | Connector color | Line color |
|---|-----------------|------------|
| 1 | Yellow | Black |
| 2 | White | Black |
| 3 | Blue | Black |
| 4 | White | Red |
| 5 | White | Brown |
| 6 | Yellow | White |
| 7 | White | White |
| 8 | Blue | White |

8) Disconnect the connector, and remove the main power switch unit.



NOTE: When installing, be careful of the connector connecting position and the installing direction. Also be careful not to break the SW pawl.

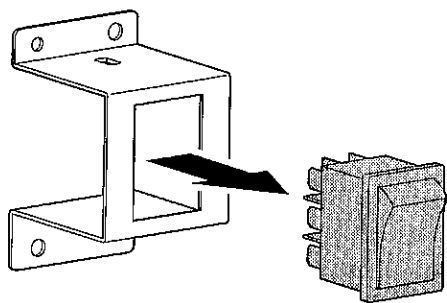


Main power switch (Connector surface)

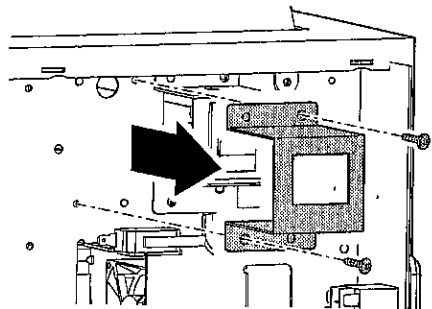
[Connector connecting position]

| | Connector color | Line color |
|---|-----------------|------------|
| 1 | White | Black |
| 2 | Black | Black |
| 3 | White | White |
| 4 | Black | White |

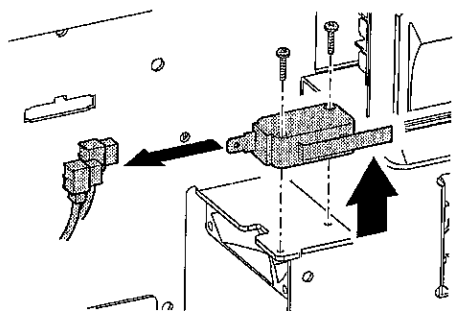
9) Remove the main power switch.



10) Remove the counter mounting plate.

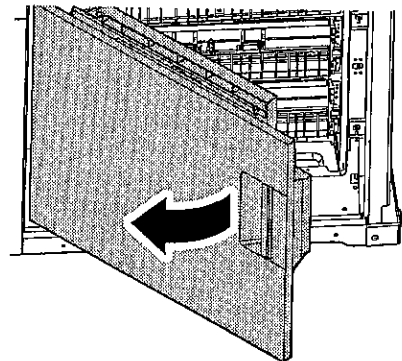


11) Disconnect the connector and remove the front door open/close switch unit.

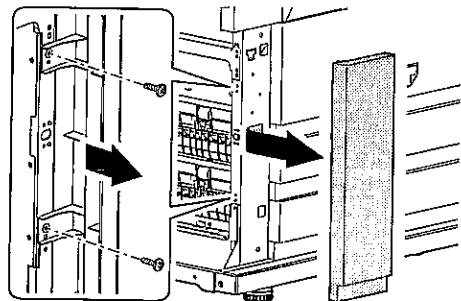


a-4. Left door open/close detector

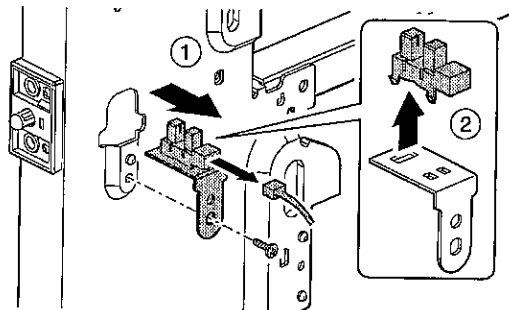
1) Open the left door.



2) Remove the left front cabinet

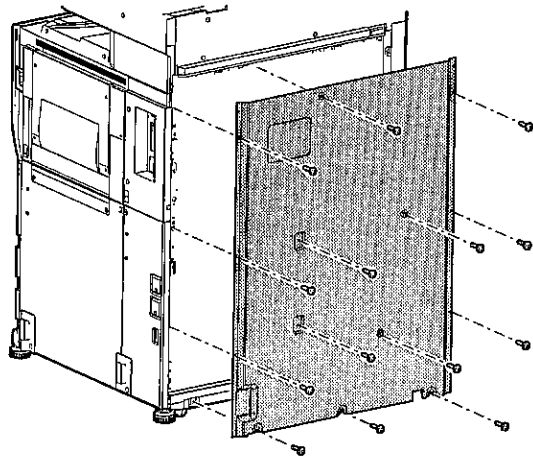


3) Disconnect the connector, and remove the left door open/close detector unit. Remove the left door open/close detector.

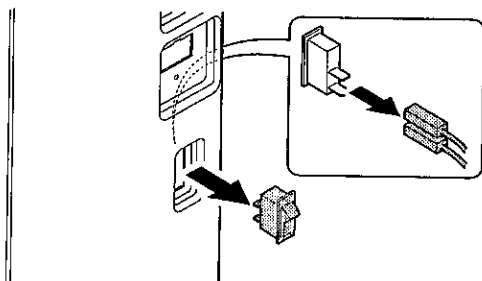


a-5. Dry heater switch

1) Remove the rear cabinet.

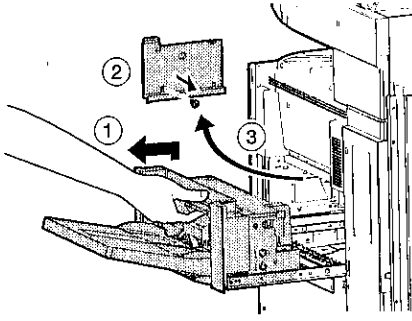


2) Disconnect the connector, and remove the dry heater switch.

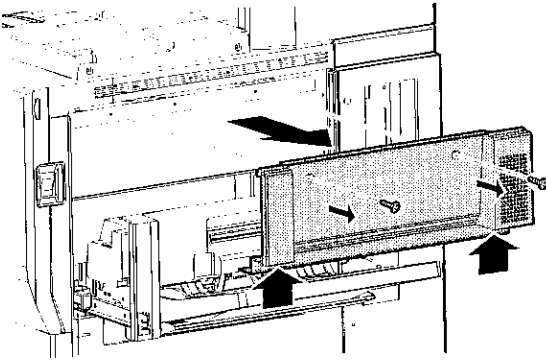


▲ a-6. Machine temperature sensor

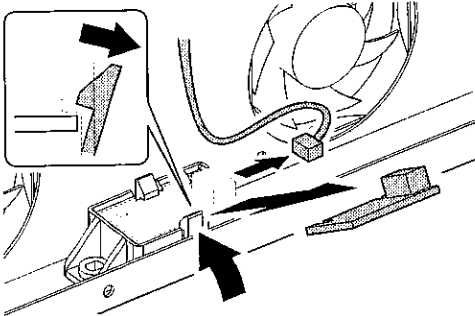
- 1) Pull out the multi paper feed tray, and remove the manual paper feed cover F.



- 2) Pushing the lower part, remove the right cabinet center.



- 3) Disconnect the connector, release the pawl, and remove the machine temperature sensor.



[7] SETTING AND ADJUSTMENTS

Each adjustment item in the adjustment item list is associated with a specific JOB number. Perform the adjustment procedures in the sequence of Job numbers from the smallest to the greatest.

However, there is no need to perform all the adjustment items. Perform only the necessary adjustments according to the need.

Unnecessary adjustments can be omitted. Even in this case, however, the sequence from the smallest to the greatest JOB number must be observed.

If the above precaution should be neglected, the adjustment would not complete normally or trouble may occur.

| Job No | Adjustment item list | | | Simulation |
|--------|---|---------|--|-----------------|
| ADJ 1 | Adjusting high voltage values | ADJ 1A | Adjust the main charger grid voltage | 8-2 |
| | | ADJ 1B | Adjust the developing bias voltage | 8-1 |
| | | ADJ 1C | Adjust the transfer current | 8-6, 8-17, 8-18 |
| ADJ 2 | Adjusting the developing unit | ADJ 2A | Adjust the developing doctor gap | |
| | | ADJ 2B | Adjust the developing roller main pole | |
| ADJ 3 | Adjusting image distortions | ADJ 3A | Adjust print image distortions (LSU parallelism adjustment) | 64-1 |
| | | ADJ 3B | Adjust the scanner (reading) unit parallelism | |
| | | ADJ 3C | Adjust scanned image distortions in the sub-scanning direction | |
| | | ADJ 3D | Adjust scanned image distortions in the main scanning direction - 1 | |
| | | ADJ 3E | Adjust scanned image distortions in the main scanning direction - 2 | |
| ADJ 4 | Adjusting the SPF parallelism | ADJ 4A | Adjust SPF levelness | |
| | | ADJ 4B | Adjust SPF skews | 64-1 |
| ADJ 5 | Adjusting the image focus | ADJ 5A | Adjust the image focus in original table mode and SPF front-face mode (CCD) | 48-1 |
| | | ADJ 5B | Adjust the image focus in SPF back-face mode (CIS) | |
| ADJ 6 | Adjusting the image magnification | ADJ 6A | Adjust the image magnification in the main scanning direction in original table mode (CCD) | 48-1 |
| | | ADJ 6B | Adjust the image magnification in the sub-scanning direction in original table mode (CCD) | 48-1 |
| | | ADJ 6C | Adjust the image magnification in the main scanning direction in SPF front-face mode (CCD) | 48-1 |
| | | ADJ 6D | Adjust the image magnification in the main scanning direction in SPF back-face mode (CIS) | 48-1 |
| | | ADJ 6E | Adjust the image magnification in the sub-scanning direction in SPF mode | 48-1, 48-5 |
| ADJ7 | Adjusting the image off-center | ADJ 7A | Adjust the print image off-center (print engine section) | 50-5 (50-10) |
| | | ADJ 7B | Adjust the scanned image off-center in original table mode (scan section) | 50-12 |
| | | ADJ 7C | Adjust the scanned image off-center in SPF front-face mode (scan section) | 50-12 |
| | | ADJ 7D | Adjust the scanned image off-center in SPF back-face mode (scan section) | 50-12 |
| ADJ 8 | Adjusting the image position, image loss, and void area | ADJ 8A | Adjust copied image loss/void area in original table mode | 50-1 |
| | | ADJ 8B | Adjust the original scan start position (adjust the scanner read position in SPF-mode front face scan) | 53-8 |
| | | ADJ 8C | Adjust the copied image loss/void area in SPF mode | 50-6 |
| | | ADJ 8D | Adjust the image loss in scanner mode | 50-27 |
| | | ADJ 8E | Adjust the image loss for images sent in fax mode | 50-27 |
| ADJ 9 | Adjusting the copied image quality | ADJ 9A | Adjust the binary mode copy density for all modes at once | 46-2 |
| | | ADJ 9B | Adjust the copy density in text binary mode | 46-9, 10, 11 |
| | | ADJ 9C | Adjust the copy density in text/photo binary mode | |
| | | ADJ 9D | Adjust the copy density in photo binary mode | |
| | | ADJ 9E | Adjust the copied image gamma in copy mode | 46-18 |
| ADJ 10 | Adjusting the print quality in fax mode | ADJ 9F | Adjust the copied image sharpness | 46-31 |
| | | ADJ 10A | Adjust the fax mode print density for all modes at once | 46-12 |
| | | ADJ 10B | Adjust the fax mode print density in standard mode | 46-13, 46-14, |
| | | ADJ 10C | Adjust the fax mode print density in small-character mode | 46-15, 46-16, |
| | | ADJ 10D | Adjust the fax mode print density in fine mode | 46-45 |
| | | ADJ 10E | Adjust the fax mode print density in super fine mode | |
| | | ADJ 10F | Adjust the fax mode print density in 600dpi mode | |

| Job No | Adjustment Item list | | | Simulation |
|----------|---|---------|---|-----------------------------------|
| ▲ ADJ11 | Adjusting the image quality in scan mode | ADJ 11A | Adjust the scan mode image density for all modes at once | 46-21 |
| | | ADJ 11B | Scan mode image density adjustment/individual setup (standard mode) | 46-21, 46-22, 46-23, 46-24, 46-25 |
| | | ADJ 11C | Scan mode image density adjustment/individual setup (small-character mode) | |
| | | ADJ 11D | Scan mode image density adjustment/individual setup (fine mode) | |
| | | ADJ 11E | Scan mode image density adjustment/individual setup (super fine mode) | |
| | | ADJ 11F | Adjust the image gamma in scanner mode | 46-27 |
| ▲ ADJ12 | Common image quality adjustments for all of copy, scan, and fax modes | ADJ 12A | Correct the image density in original table mode/SPF mode (Copy mode) | 46-20 |
| | | ADJ 12B | Set up the auto mode operation for copy, scan, and fax | 46-19 |
| | | ADJ 12C | Adjust the shading reference value (gain adjustment) | 46-17 |
| ADJ13 | Adjusting the fusing paper guide position | | | |
| ADJ 14 | Adjusting the paper size detection | ADJ 14A | Adjust the paper width sensor for the manual paper feed tray | 40-2 |
| | | ADJ 14B | Adjust the paper width sensor for paper feed tray 3 | 40-12 |
| | | ADJ 14C | Adjust the paper width sensor for the SPF paper feed tray | 53-6 |
| ▲ ADJ 15 | Adjusting the original size detection (in original table mode) | ADJ 15A | Adjust the detection point of the original size sensor (in original table mode) | 41-1 |
| | | ADJ 15B | Adjust the sensitivity of the original size sensor | 41-2 |
| ADJ16 | Adjusting the touch panel coordinates | | | 65-1 |
| ADJ17 | Adjusting the supply voltage | | | |

ADJ 1 Adjusting high voltage values

Note: Adjusting the output voltage requires the ability to measure internal impedance of 1000 MW.

ADJ 1A Adjust the main charger grid voltage

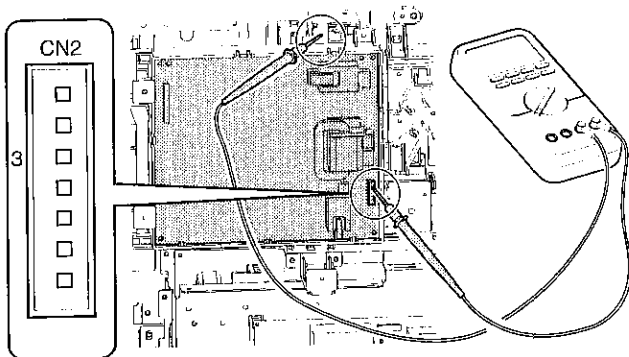
This adjustment is needed in the following situations:

- The high voltage power PWB (MC/DV/TC) has been replaced.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM of the PCU PWB has been replaced.

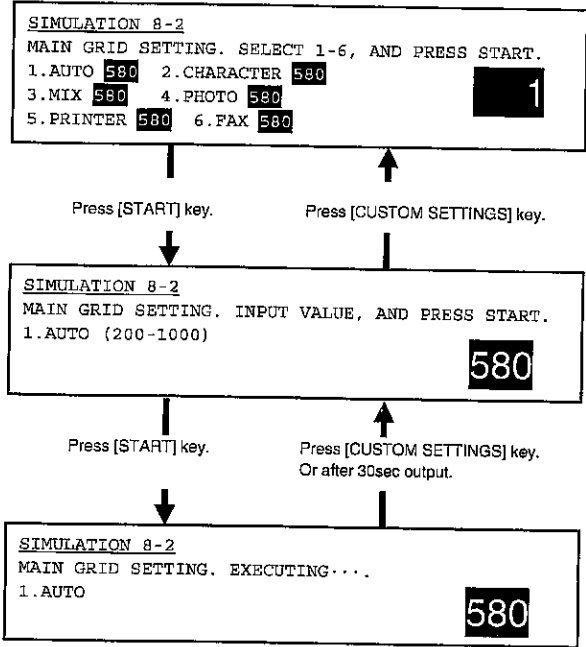
(Main charger grid voltage adjustment)

| Item/operation mode | | Simulation | | | High voltage power PWB (MC/DV/TC) | | |
|---------------------|-----------------|-------------|---------------|---------|-----------------------------------|-------|----------------|
| | | | Setting range | Default | Connector | Pin # | Actual voltage |
| Copy | Auto mode | 8-2 AUTO | 200 – 1000 | 580 | CN2 | 3 | -590±2v |
| | Text mode | CHARACTER | 200 – 1000 | 580 | CN2 | 3 | -590±2v |
| | Text/photo mode | MIX | 200 – 1000 | 580 | CN2 | 3 | -590±2v |
| | Photo mode | PHOTO | 200 – 1000 | 580 | CN2 | 3 | -590±2v |
| Printer | All modes | PRINTER | 200 – 1000 | 580 | CN2 | 3 | -590±2v |
| FAX | All modes | FAX | 200 – 1000 | 580 | CN2 | 3 | -590±2v |

- 1) Remove the rear cover of the machine.
- ▲ 2) Apply a digital multi-meter to the connector CN2 pin (3) of the high voltage PWB and the chassis GND.



3) Go through the modes specified in Simulation 8-2.



- 4) Select the number that corresponds to the adjustment item using the numeric keypad.
- 5) Press the Start key.
- 6) Press the start key to have the voltage output for 30 seconds.
The operation can be stopped with the CUSTOM SETTINGS key.
If the output voltage is not within the requirement, do the following steps.
- 7) Enter the adjustment value using the numeric keypad.
- 8) Press the Start key
(The adjustment value is put into memory, and the corresponding voltage is output for 30 seconds.)
Repeat steps 7 to 8 until the output requirement is satisfied.

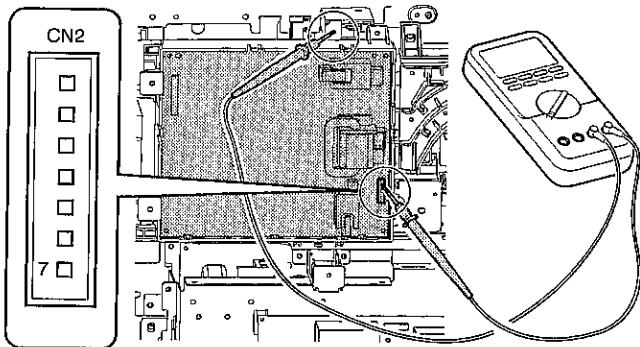
ADJ 1B Adjust the developing bias voltage

- This adjustment is needed in the following situations:
- The high voltage power PWB (MC/DV/TC) has been replaced.
 - U2 trouble has occurred.
 - The PCU PWB has been replaced.
 - The EEPROM of the PCU PWB has been replaced.

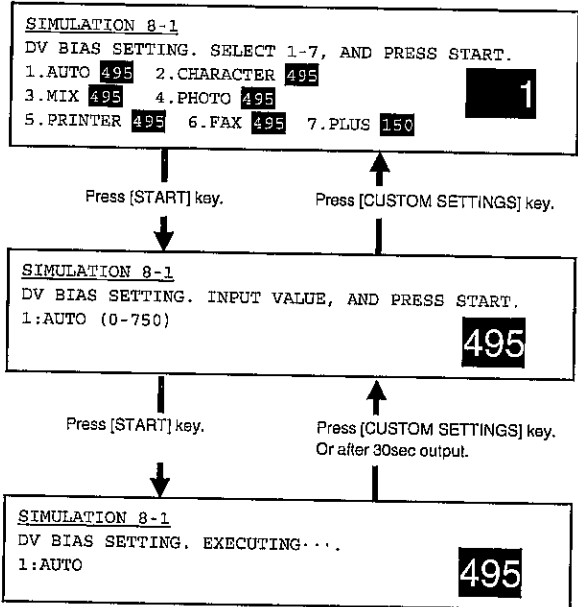
(Main charger grid voltage adjustment)

| Item/operation mode | | Simulation | | | High voltage power PWB (MC/DV/TC) | | |
|---------------------|-----------------|------------|---------------|---------|-----------------------------------|-------|----------------|
| | | | Setting range | Default | Connector | Pin # | Actual voltage |
| Copy | Auto mode | 8-1 AUTO | 0 - 750 | 495 | CN2 | 7 | -500±5v |
| | Text mode | CHARACTER | 0 - 750 | 495 | CN2 | 7 | -500±5v |
| | Text/photo mode | MIX | 0 - 750 | 495 | CN2 | 7 | -500±5v |
| | Photo mode | PHOTO | 0 - 750 | 495 | CN2 | 7 | -500±5v |
| Printer | All modes | PRINTER | 0 - 750 | 495 | CN2 | 7 | -500±5v |
| FAX | All modes | FAX | 0 - 750 | 495 | CN2 | 7 | -500±5v |
| Cleaning mode | | PLUS | 0 - 250 | 150 | CN2 | 7 | +150±5v |

- 1) Remove the rear cover of the machine.
- 2) Apply a digital multi-meter to the connector CN2 pin (7) of the high voltage PWB and the chassis GND.



3) Go through the modes specified in Simulation 8-1.



⚠ : Feb. 9 2004

- 4) Select the number that corresponds to the adjustment item using the numeric keypad.
- 5) Press the Start key.
- 6) Press the start key to have the voltage output for 30 seconds.
The operation can be stopped with the CUSTOM SETTINGS key.
If the output voltage is not within the requirement, do the following steps.
- 7) Enter the adjustment value using the numeric keypad.
- 8) Press the Start key
(The adjustment value is put into memory, and the corresponding voltage is output for 30 seconds.)

Repeat steps 7 to 8 until the output requirement is satisfied.

ADJ 1C Adjust the transfer voltage

(Transfer voltage adjustment)

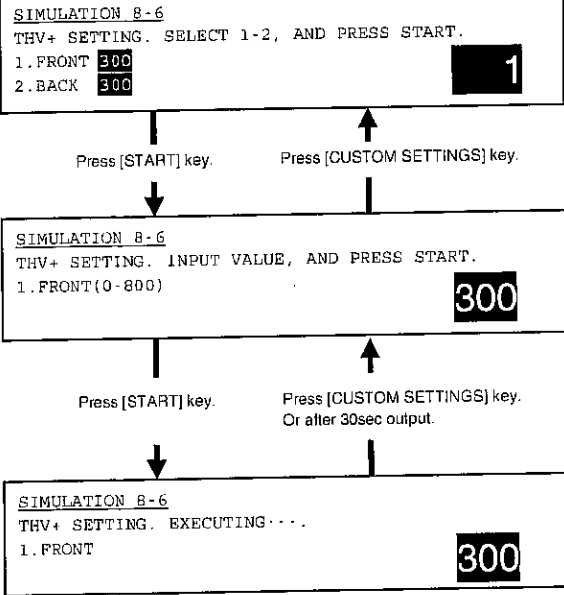
| Item/operation mode | Simulation | | | Adjustment voltage (monitor voltage) | Connector | Pin # | Actual voltage/actual current | |
|----------------------------|------------|------------|--------------------------|--------------------------------------|-----------|-----------|-------------------------------|--------------------------------------|
| | | | Setting range Default | | | | | |
| Front print | 8-6 | FRONT | 0 – 800 350 | – | – | – | 35±1.0μA (1.0 – 1.5Kv) | High voltage power PWB (MC/DV/TC) |
| | | | 400* | | | | 40±1.0μA (2.0 – 2.5Kv)* | |
| Back print | | BACK | 0 – 800 350 | – | – | – | 35±1.0μA (1.0 – 1.5Kv) | |
| | | | 400* | | | | 40±1.0μA (2.0 – 2.5Kv)* | |
| Transfer belt (cleaning) | 8-17 | SHF FRONT | 0 – 600 450 | – | – | – | AC4.5Kv (p-p) | |
| | | SHF BACK | 0 – 600 450 | – | – | – | AC4.5Kv (p-p) | |
| | | THV- | 0 – 75 10 | DC -100±10v | CN2 | 1 | DC -100±10v / AC4.5Kv (p-p) | |
| Transfer roller (cleaning) | 8-18 | CRHV PLUS | 0 – 250 200 | +2.0±0.1v | – | Check pin | +2000±100v | |
| Transfer roller (print) | | CRHV MINUS | 0 – 250 200 | -2.0±0.1v | – | Check pin | -2000±100v | High voltage power PWB (TC cleaning) |

⚠ *: AR-M700N/U

Transfer voltage adjustment (print operation mode)

This adjustment is needed in the following situations:

- The high voltage power PWB (MC/DV/TC) has been replaced.
 - U2 trouble has occurred.
 - The PCU PWB has been replaced.
 - The EEPROM of the PCU PWB has been replaced.
- 1) Go through the modes specified in Simulation 8-6.



- 2) Select the number that corresponds to the adjustment item (FRONT/BACK) using the numeric keypad.
- 3) Press the Start key

- 4) Enter the adjustment value (default) using the numeric keypad.
- 5) Press the Start key

⚠ (The adjustment value is put into memory, and the corresponding current is output for 30 seconds.)

The operation can be stopped with the CUSTOM SETTINGS key.

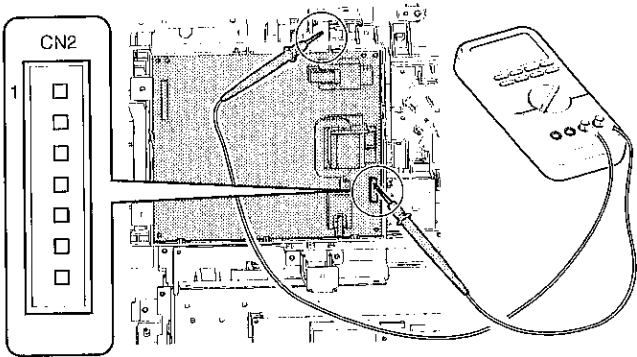
Note: It is not possible to determine the adjusted transfer voltage (print operation mode) (FRONT/BACK). If the voltage seems to be abnormal after setting the default value, therefore, the high voltage PWB (MC/DV/TC) should be replaced.

Transfer voltage adjustment (transfer belt cleaning mode)

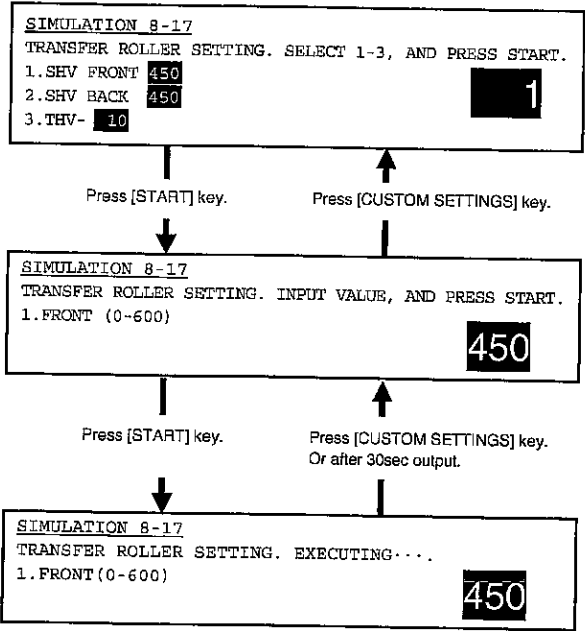
This adjustment is needed in the following situations:

- The high voltage power PWB (MC/DV/TC) has been replaced.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM of the PCU PWB has been replaced.

- 1) Remove the rear cover of the machine.
- 2) Apply a digital multi-meter to the connector CN2 pin (1) of the high voltage PWB and the chassis GND.



3) Go through the modes specified in Simulation 8-17.



- 4) Select the number that corresponds to the adjustment item (SHF FRONT / SHF BACK) using the numeric keypad.
- 5) Press the Start key.
- 6) Set each adjustment item to the default value (enter the adjustment value and then press the Start key).

Note: The adjustment items (SHF FRONT / SHF BACK) correspond to the AC component of the 'transfer belt cleaning mode voltage' applied to the transfer roller, but this voltage component cannot be determined. If the voltage seems to be abnormal after setting the default adjustment value, therefore, the high voltage PWB (MC/DV/TC) should be replaced.

- 7) Select the number that corresponds to cleaning operation mode (THV-) using the numeric keypad.
- Note: The adjustment items (THV-) corresponds to the DC component of the 'transfer belt cleaning mode voltage' applied to the transfer roller.

- 8) Press the Start key.
 - 9) Press the Start key to have the voltage output for 30 seconds.
- If the output voltage is not within the requirement, do the following steps.

The operation can be stopped with the CUSTOM SETTINGS key.

- 10) Enter the adjustment value using the numeric keypad.
 - 11) Press the Start key.
- (The adjustment value is put into memory, and the corresponding voltage is output for 30 seconds.)

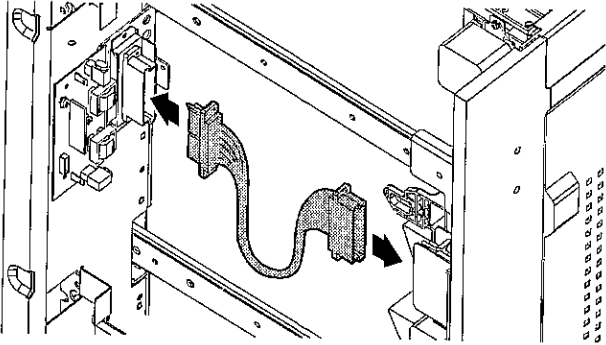
Repeat steps 10 to 11 until the output requirement is satisfied.

Transfer voltage adjustment (transfer roller cleaning/ transfer roller print modes)

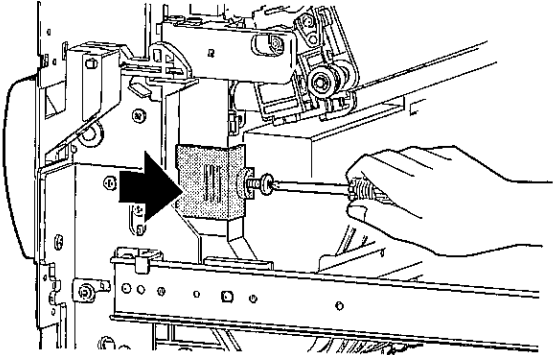
This adjustment is needed in the following situations:

- The high voltage power PWB (TC cleaning) has been replaced.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM of the PCU PWB has been replaced.

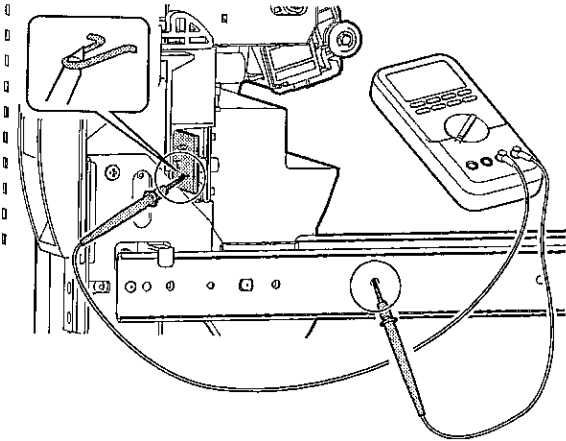
- 1) Connect the transfer section to the main body side using the transfer extension harness (DHAI-3629FCZZ).



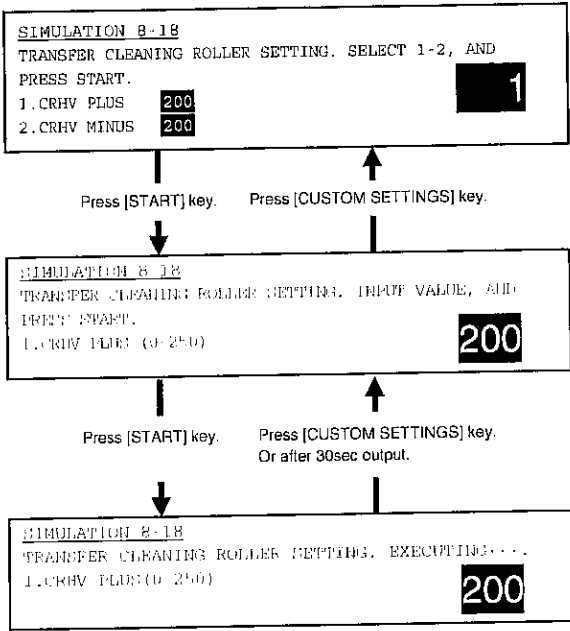
- 2) Remove the front frame cover of the duplex section, and remove the rear frame cover of the transfer section.



- 3) Apply a digital multi-meter to the check pin of the high voltage PWB (TC cleaning) and the chassis GND.



4) Go through the modes specified in Simulation 8-18.



5) Select the number that corresponds to the adjustment item (CRHV PLUS / CRHV MINUS) using the numeric keypad.

6) Press the Start key

7) Press the Start key to have the voltage output for 30 seconds.

The operation can be stopped with the CUSTOM SETTINGS key.

If the output voltage is not within the requirement, do the following steps.

8) Enter the adjustment value using the numeric keypad.

9) Press the Start key.

(The adjustment value is put into memory, and the corresponding voltage is output for 30 seconds.)

Repeat steps 8 to 9 until the output requirement is satisfied.

ADJ 2 Adjusting the developing unit

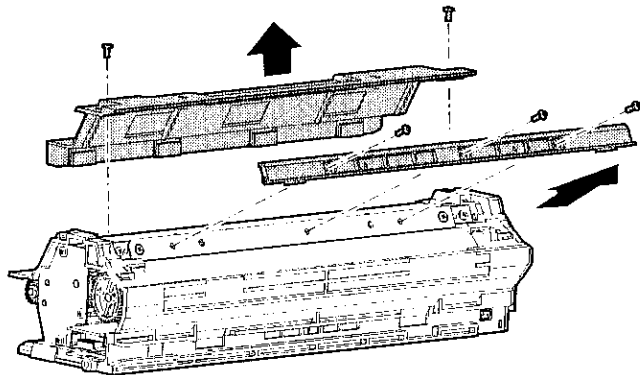
ADJ 2A Adjust the developing doctor gap

This adjustment is needed in the following situations:

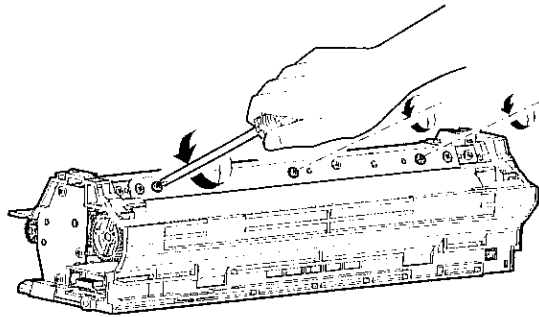
- The developing unit has been disassembled.
- The print density is low.
- The toner is excessively dispersed.

1) Remove the developing unit of the machine.

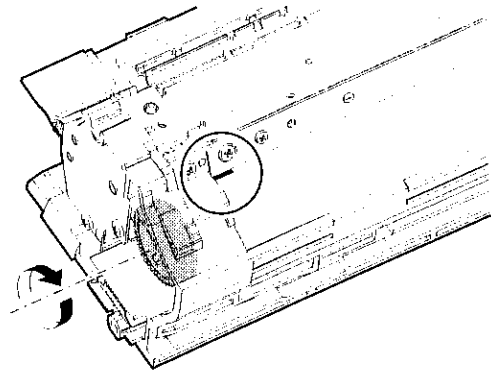
2) Remove the developing unit cover and blade cover.



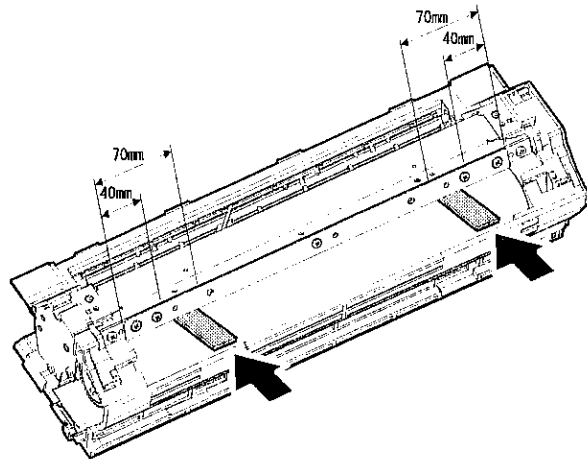
3) Loosen the DV doctor fixing screws.



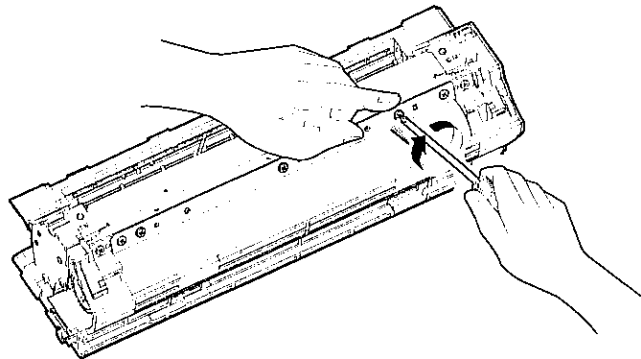
4) Manually turn the DV roller to align the marking on the DV roller surface with the DV doctor position.



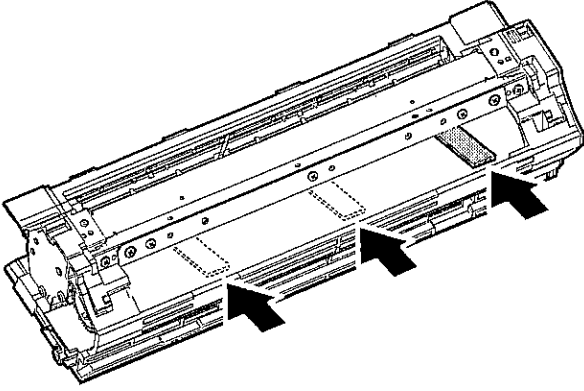
5) Insert a 0.525mm clearance gauge in between the DV roller and DV doctor so that the gauge is positioned at a distance of 40 mm to 70 mm from the DV doctor end face.



6) Tighten the DV doctor fixing screws while pressing the DV doctor in the arrow direction. (This should be done for both front and rear frames.)



- 7) On both sides of the DV doctor and at its center, make sure that the DV doctor gap is 0.525 ± 0.03 .



Note: When inserting a clearance gauge, take care not to damage the DV doctor or MG roller.

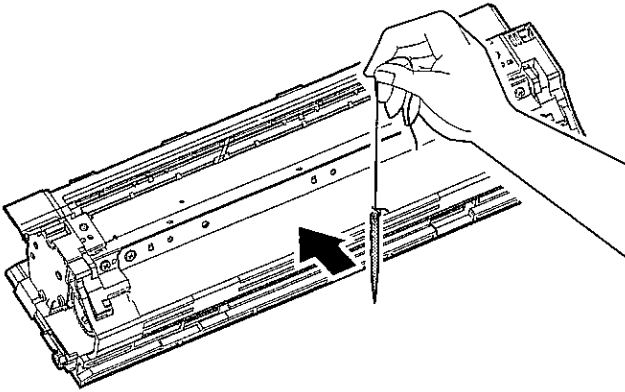
Repeat steps 2 to 6 until the DV doctor gap meets the requirement.

ADJ 2B Adjust the developing roller main pole

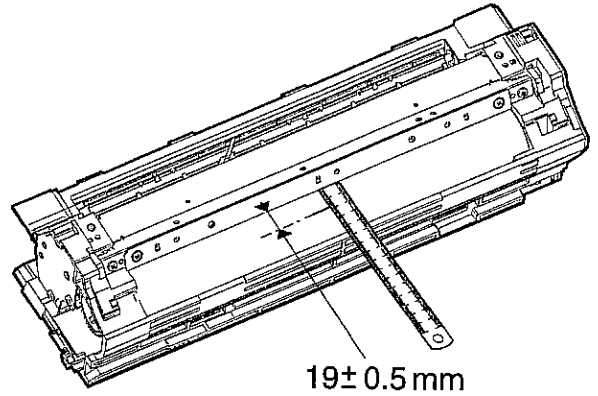
This adjustment is needed in the following situations:

- The developing unit has been disassembled.
- The print density is low.
- The toner is excessively dispersed.

- 1) Remove the developing unit.
- 2) Remove the developing unit cover and blade cover, and then place the developing unit on a level surface.
- 3) Attach a piece of string to a sewing needle or pin.
- 4) With the string in hand, bring the needle closer to the DV roller while keeping the needle parallel with the roller. (Do not use a clip, which does not accurately indicate the position.)

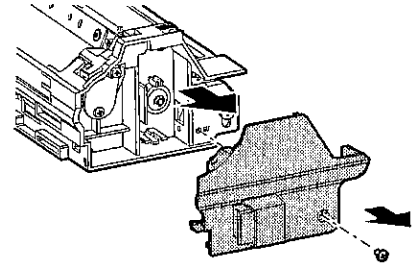


- 5) Keeping the needle 2 to 3 mm off the DV roller surface, mark the DV roller surface at an extension of the needle tip. (Do not let the needle tip contact the DV roller.)
- 6) Measure the distance between the marking on the DV roller and leading edge of the DV doctor, and make sure that it is 19 ± 0.5 mm.

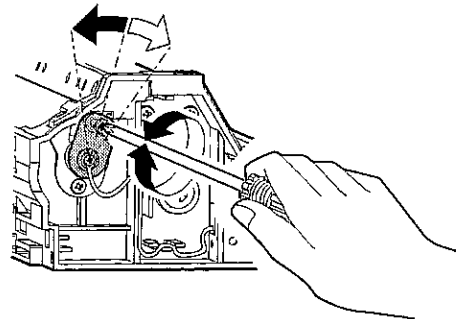


If this requirement is not met, do the following steps.

- 7) Remove the front cover.



- 8) Loosen the fixing screws of the developing roller main pole adjusting plate, and make adjustments by moving the adjusting plate in the arrow direction.



Repeat steps 3 to 6 until the developing roller main pole meets the positional requirement.

ADJ 3 Adjusting image distortions

ADJ 3A Adjust print image distortions (LSU parallelism adjustment)

This adjustment is needed in the following situations:

- The LSU has been replaced or removed.
- Print images are distorted.

This adjustment should be followed by:

- ▲ ADJ 7 / ADJ 7A: Adjust the print image off-center (print engine section)

- 1) Set A4 (11 x 8.5) paper to Tray 1.
- 2) Go through the modes specified in Simulation 64-1.

SIMULATION 64-1
SELF PRINT MODE. SELECT 0-7, AND PRESS START.

| | |
|---------------------|----------------|
| 0. TRAY SELECT : 1 | 1. PRINT START |
| 2. PRINT PATTERN: 7 | 3. DENSITY : 1 |
| 4. MULTI : 1 | 5. MODE : 1 |
| 6. LEVEL : 1 | 7. DUPLEX : 1 |

Select 1, and
press [START] key.

Select other than 1, and
press [START] key.

Press [START] key, or
press [CUSTOM SETTINGS] key.

(2) **SIMULATION 64-1**
SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(PRINT PATTERN)
INPUT 1-98. 71

(3) **SIMULATION 64-1**
SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(DENSITY)
1-255 100

(4) **SIMULATION 64-1**
SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(MULTI COUNT)
1-999 1

(5) **SIMULATION 64-1**
SELF PRINT MODE. SELECT 1-8, AND PRESS START.
(MODE)
1. STANDARD 2. SMOOTHING 3. TONER SAVE 4. HALF TONE
5. SMOOTHING+ TONER SAVE 6. SMOOTHING+ HALF TONE
7. TONER SAVE+ HALF TONE
8. SMOOTHING+ TONER SAVE+ HALF TONE 1

(6) **SIMULATION 64-1**
SELF PRINT MODE. INPUT VALUE, AND PRESS START.
(LEVEL)
1-5 3

(0) **SIMULATION 64-1**
SELF PRINT MODE. SELECT 1-6, AND PRESS START.
(FEED TRAY)
1. TRAY1 2. TRAY2 3. TRAY3 4. TRAY4 5. BPT
6. LCC 1

(7) **SIMULATION 64-1**
SELF PRINT MODE. SELECT 1-2, AND PRESS START.
(DUPLEX)
1. NO 2. YES 1

SIMULATION 64-1
SELF PRINT MODE.. EXECUTING...

| | |
|---------------------|----------------|
| 0. TRAY SELECT : 1 | 3. DENSITY : 1 |
| 2. PRINT PATTERN: 7 | 5. MODE : 1 |
| 4. MULTI : 1 | 7. DUPLEX : 1 |
| 6. LEVEL : 1 | |

0

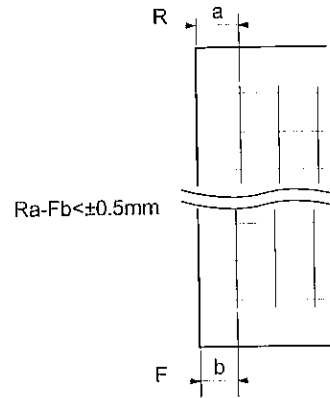
- 3) Select PRINT PATTERN using the numeric keypad.
- 4) Select print pattern 71 (grid pattern).
- 5) Press the Start key
- 6) Select PRINT START using the numeric keypad.
- 7) Press the Start key
- 8) Check the printed grid pattern for distortions.

Check with one of the following methods.

[Check Method 1]

Compare the front frame side and rear frame side of the printed paper in terms of the distance between the outer end of the grid pattern image and the edge of the paper.

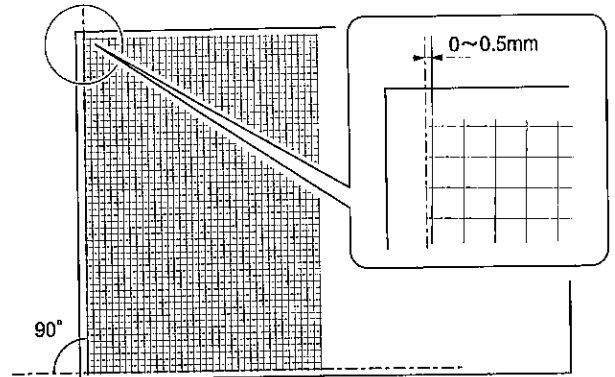
No adjustment is needed if the difference between these dimensions is within 0.5 mm.



[Check Method 2]

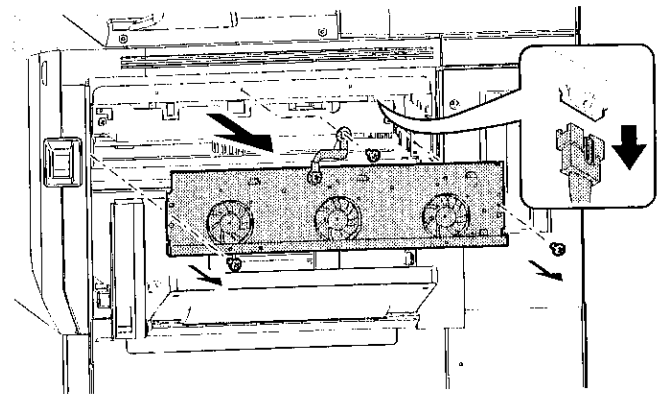
Check the printed grid pattern for distortions.

If the right-angle level of the traverse print line is 0.5mm or less with respect to the longitudinal print line of paper, no adjustment is needed.



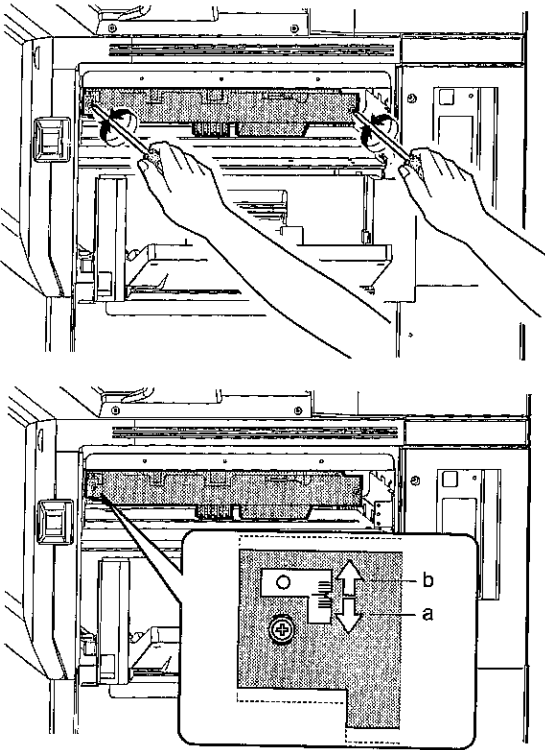
Carry out the following work if the situation is unsatisfactory.

- 9) Draw out the manual paper feed tray, and remove the front frame side, side cover, fan cover cabinet, and fan unit.
- 10) Remove the fan unit.



- 11) Loosen the LSU fixing screws, and change the LSU fixing angle.

- If the vertical line image is inclined to the left with respect to the front frame side, move the LSU fixing plate in arrow direction (a).
- If the vertical line image is inclined to the right with respect to the front frame side, move the LSU fixing plate in arrow direction (b).



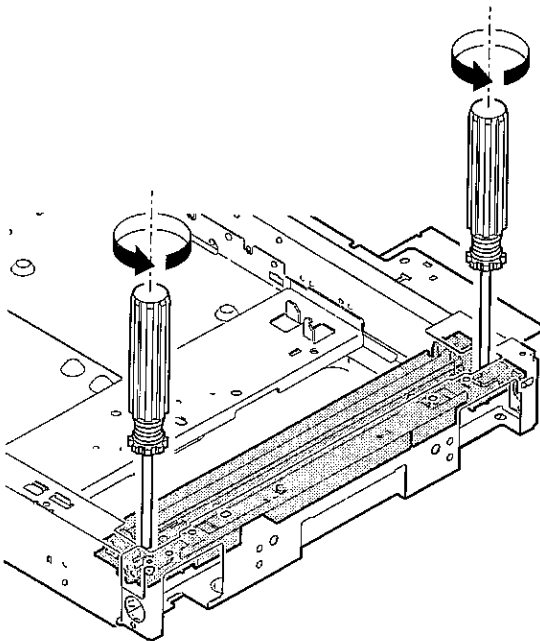
▲ Repeat steps 5 to 11 until an acceptable result is obtained.

ADJ 3B Adjust the scanner (reading) unit parallelism

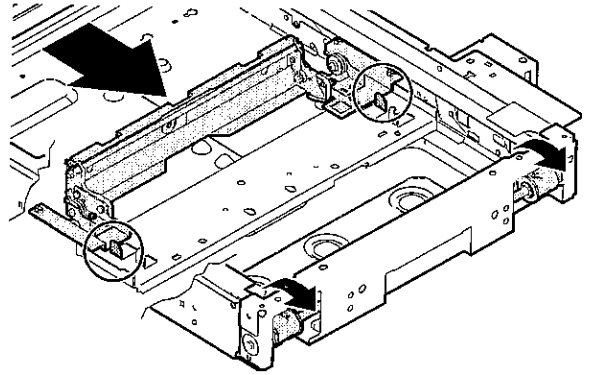
This adjustment is needed in the following situations:

- The scanner (reading) section has been disassembled.
- Scanned images are distorted.

- 1) Loosen the fixing screws for Scanner Unit A and scanner drive wire to release the scanner unit from the drive wire.

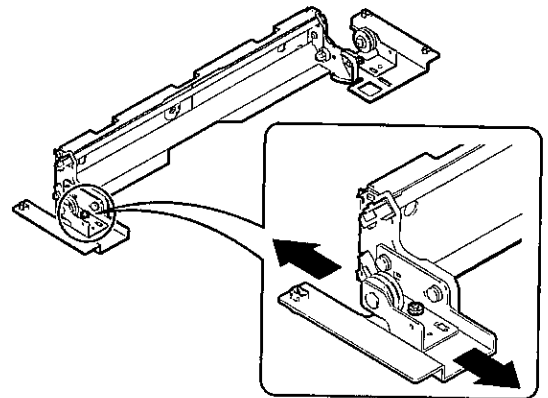


- 2) Manually turn the scanner drive pulley, and move Scanner Unit B until contact with the two stoppers on the CCD mounting plate.
If Scanner Unit B makes contact with the two stoppers on the CCD mounting plate simultaneously, the parallelism of Scanner Unit B is proper.



If this requirement is not met, do the following steps.

- 3) Loosen the pulley angle fixing screw on either the front or rear frame side of Scanner Unit B.



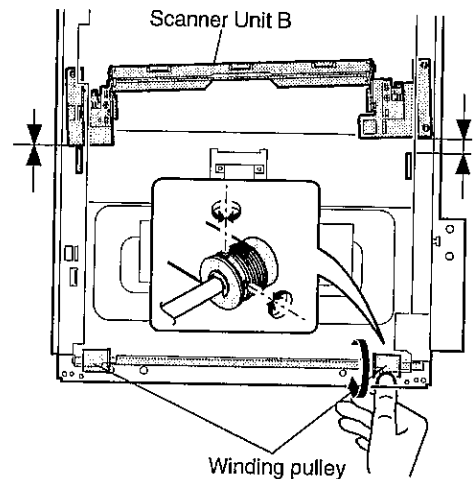
- 4) Adjust the pulley angle position on Scanner Unit B so that the scanner unit makes contact with both of the two stoppers on the CCD mounting plate at the same time.

- 5) Fix the pulley angle on Scanner Unit B.

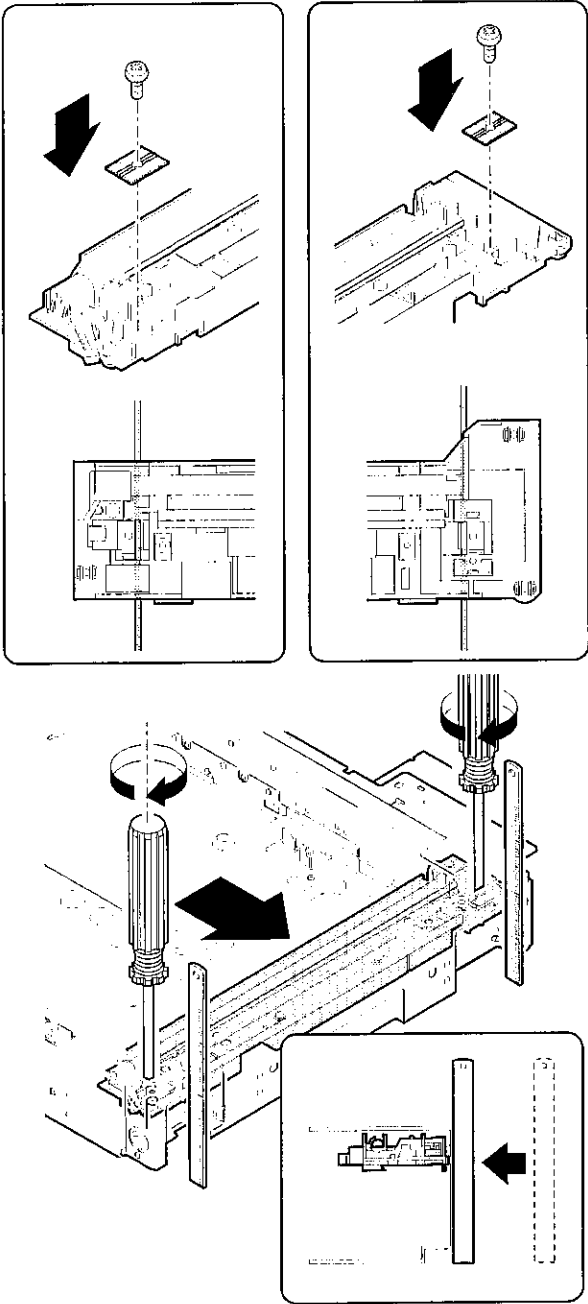
If the above steps fail to provide an acceptable result, then do the following steps.

- 6) Loosen the fixing screw of the scanner unit drive pulley that is not in contact.

- 7) Manually turning the scanner unit drive pulley, move Scanner Unit B until it comes into contact with the two stoppers on the CCD mounting plate.



- 8) Without moving the scanner unit drive shaft, manually turn the scanner unit drive pulley so that Scanner Unit B makes contact with both of the two stoppers on the CCD mounting plate at the same time. (Change the positional relationship between the scanner unit drive pulley and the drive shaft.)
- 9) With Scanner Unit B in contact with both of the two stoppers on the CCD mounting plate at the same time, align the end face of Scanner Unit A with the right-hand side end face of the frame, and fix Scanner Unit A with the screws.

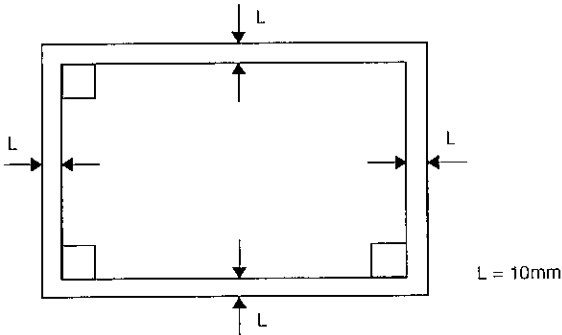


ADJ 3C Adjust scanned image distortions in the sub-scanning direction

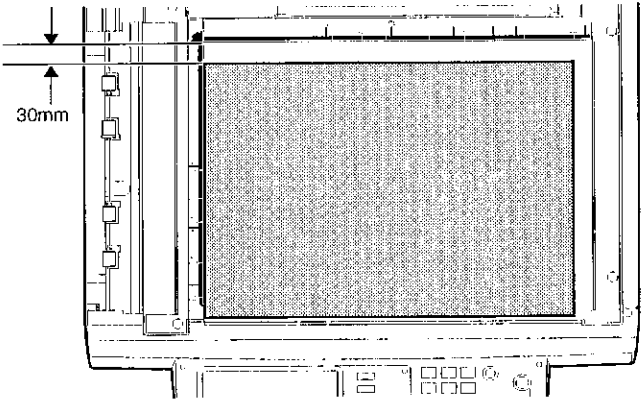
This adjustment is needed in the following situations:

- The scanner (reading) section has been disassembled.
- Scanned images are distorted.

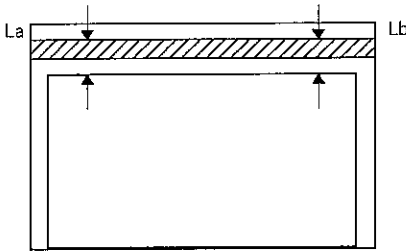
- 1) Make a test chart on A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)



- 2) Set the test chart made in step 1 on the document table (about 30 mm in front of the document standard setting position), and make a copy on A3 (11" x 7") paper with the SPF unit open.

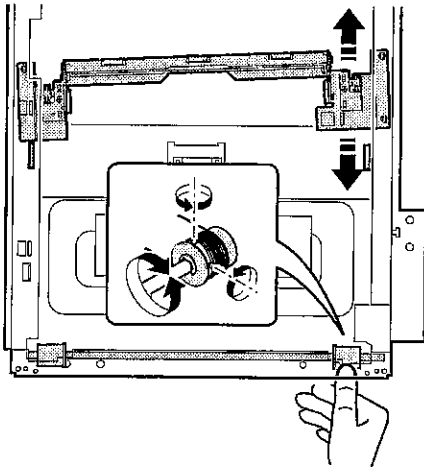


- 3) Check for distortions in the sub scanning direction.
If $L_a = L_b$, there is no distortion.



If there is some distortion in the sub scanning direction, do the following steps.

- 4) Loosen either of two fixing screws of the scanner unit drive pulley. (Either one on the front or the rear side will do.)



- 5) With the scanner unit drive shaft kept stationary, manually turn the scanner unit drive pulley to change the parallelism of Scanner Units A and B. (Change the positional relationship between the scanner unit drive pulley and the drive shaft.)
- 6) Tighten the scanner unit drive pulley fixing screw.

Repeat steps 2 to 6 until an acceptable result is obtained.

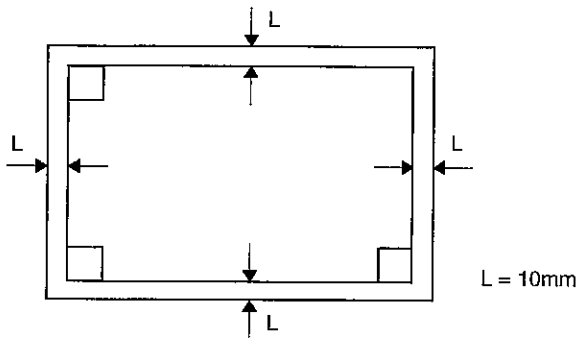
If the above steps fail to eliminate distortions in the sub scanning direction, do the steps described in "ADJ 6E: Adjust scanned image distortions in the main scanning direction - 2."

ADJ 3D Adjust scanned image distortions in the main scanning direction - 1

This adjustment is needed in the following situations:

- The scanner (reading) section has been disassembled.
- Scanned images are distorted.

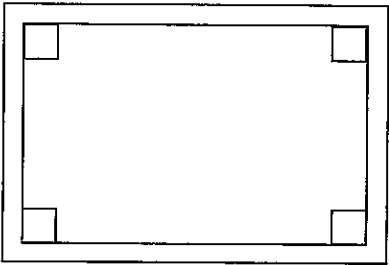
- 1) Make a test chart on A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)



- 2) Set the test chart made in step 1 on the document table, and make a copy on A3 (11" x 17") paper.

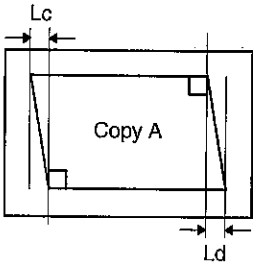
- 3) Check for distortions in the main scanning direction.

If the four angles of the rectangle on the copy are right angles, there is no distortion and therefore no further steps are needed.

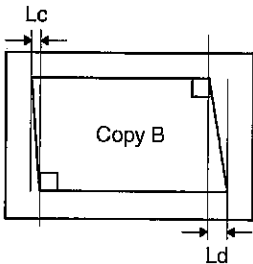


If there is some distortion in the main scanning direction, do the following steps.

- 4) Check the difference (distortion balance) between left-hand and right-hand side images distortions.



There is no difference between the distortion on the right and that on the left.
 $Lc = Ld$



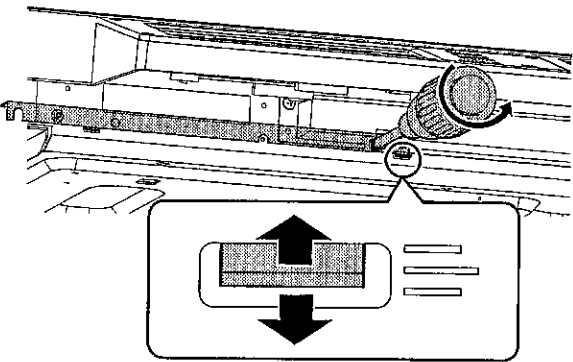
There is some difference between the distortion on the right and that on the left.
 $Lc \neq Ld$

If $Lc = Ld$, the distortion on the left is equal to that on the right. (The distortions are balanced.)

If the above requirement is satisfied, then do the steps described in "ADJ 3E: Adjust scanned image distortions in the main scanning direction - 2."

If the above requirement is not met, then do the following steps.

- 5) Change the height balance of the front frame side scanner rail.



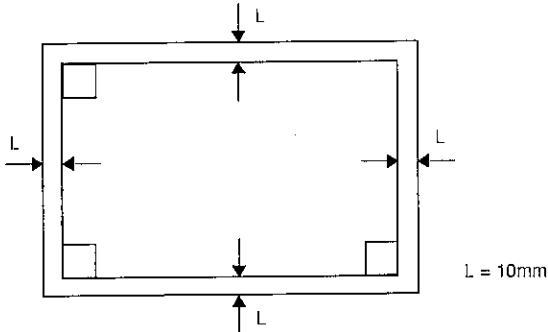
- If the paper leading edge is more distorted than the paper trailing edge, then raise the scanner rail right side.
 - If the leading edge is less distorted than the paper trailing edge, then lower the scanner rail right side.
- 6) Set the test chart made in step 1 on the document table, and make a copy on A3 (11" x 17") paper.
 - 7) Check the image distortion balance in the main scanning direction. Repeat steps 5 to 7 until the difference in size of image distortion (distortion balance) in the image scanning direction is equal.

ADJ 3E Adjust scanned image distortions in the main scanning direction - 2

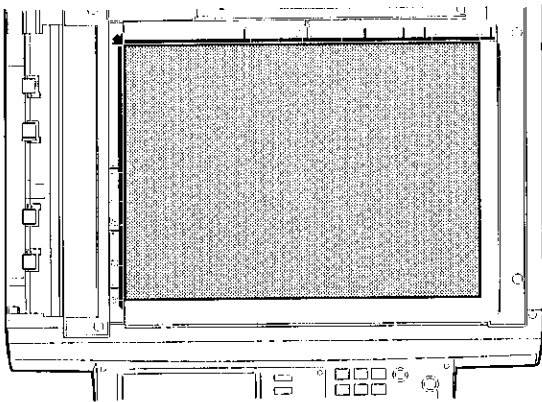
This adjustment is needed in the following situations:

- The scanner (reading) section has been disassembled.
- Scanned images are distorted.

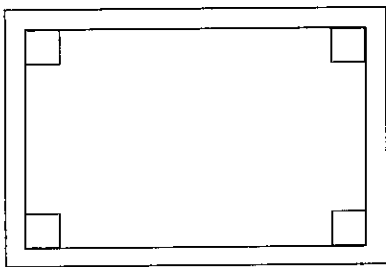
- 1) Make a test chart on A3 (11" x 17") paper as shown below. (Draw a rectangular with four right angles.)



- 2) Set the test chart made in step 1 on the document table, and make a copy on A3 (11" x 17") paper.



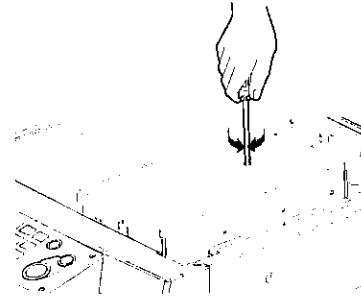
- 3) Check for distortions in the main scanning direction.
If the four angles of the rectangle on the copy are right angles, there is no distortion and therefore no further steps are needed.



If there is some distortion in the main scanning direction, do the following steps. These steps assume that there is no or little difference in distortion between the paper's leading and trailing edges.

If there is some difference in distortion between the paper's leading and trailing edges, these steps should be preceded by the adjustment steps described in "ADJ 3D: Adjust scanned image distortions in the main scanning direction - 1", intended to provide almost the same level of distortion on the leading and trailing edges.

- 4) Remove the document table glass, and make adjustments by turning the main scanning direction image distortion adjusting screw.



- If the rear frame side image is shifted toward the paper's leading edge, then turn the adjusting screw clockwise.
- If the front frame side image is shifted toward the paper's leading edge, then turn the adjusting screw counterclockwise.

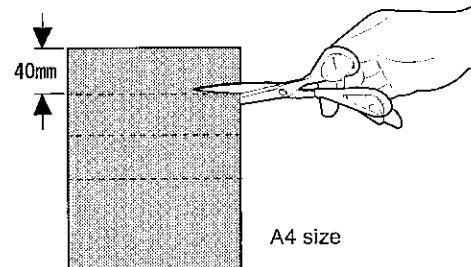
Repeat steps 2 to 4 until an acceptable result is obtained.
It changes approx. 0.5mm by 90 degrees rotation.

ADJ 4 Adjusting the SPF parallelism

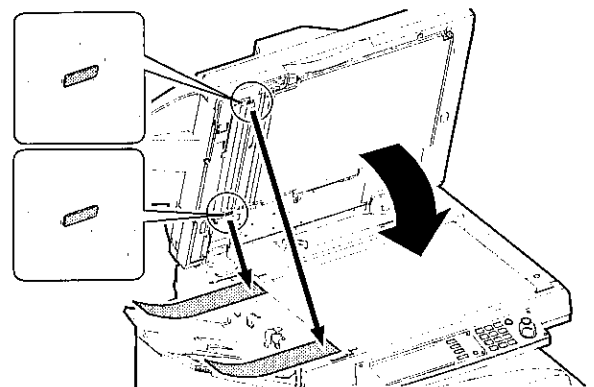
ADJ 4A Adjust SPF levelness

This adjustment is needed in the following situations:

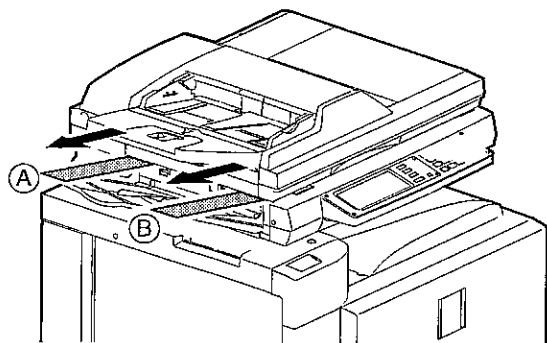
- The SPF section has been disassembled.
 - The SPF unit has been replaced.
- 1) Create two check sheets for SPF levelness adjustment by cutting copy paper as illustrated below:



- 2) Insert each of the two check sheets in between the CIS guide boss and the glass for SPF mode on each of the front and rear frame sides, and then close the SPF unit.

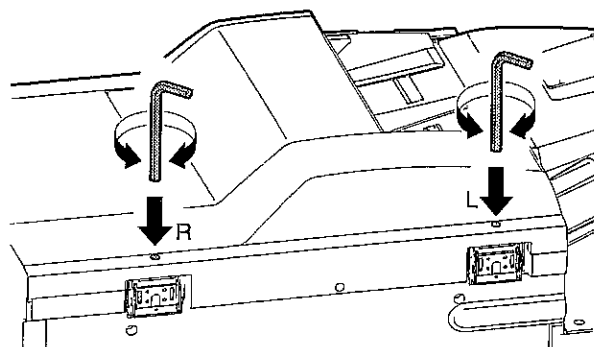


- 3) Gently pulling out each check sheet for SPF levelness adjustment, make sure that no gap is felt between the CIS guide boss and the glass for SPF mode for each of the front and rear frame sides.



If the above requirement is not met, do step 4.

- 4) Turn the height adjusting screw on the left side of the SPF rear frame to adjust the fore/aft levelness between the SPF frames.



If the front frame side is higher (i.e. there is a gap in B) : turn the height adjusting screw L on the left side of the SPF rear frame in the clockwise direction.

If the rear frame side is higher (i.e. there is a gap in A) : turn the height adjusting screw L on the left side of the SPF rear frame in the counter-clockwise direction.

Repeat steps 2 to 4 until an acceptable result is obtained.

▲ Note: If the above procedure will not allow an adjustment, turn the adjustment screw R on the rear frame of the SPF to perform an adjustment.

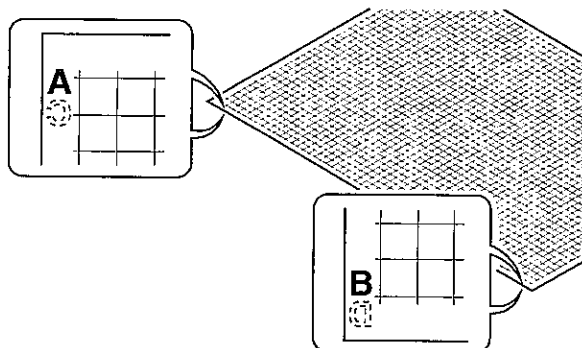
ADJ 4B Adjust SPF skews

This adjustment is needed in the following situations:

- The SPF section has been disassembled.
- The SPF unit has been replaced.
- The SPF unit generates skewed scanned images.

- 1) Create an adjustment chart by printing in duplex mode the self-print pattern (grid pattern) specified in Simulation 64-1.

Make sure that the print grid pattern is almost in parallel with the paper edges, and apply position marks 'A', 'B', 'C' and 'D' to the leading and trailing edges of the paper for both front and back sides of the paper.



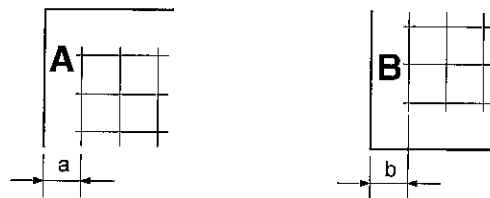
- 2) Copy the adjustment chart (created in step 1) to A3 (11" x 17") paper in duplex mode, and then check the image for skews (Set in the SPF feed tray so that the mark on the adjustment chart is at the edge).

Check with one of the following methods.

[Check Method 1]

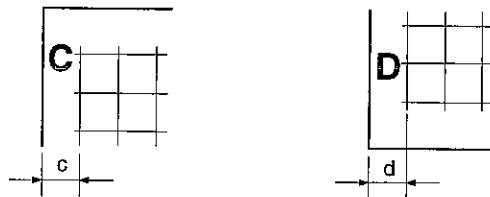
(Front side)

Make sure that the output satisfies the condition: $|a-b| \leq \pm 1 \text{ mm}$



(Back side)

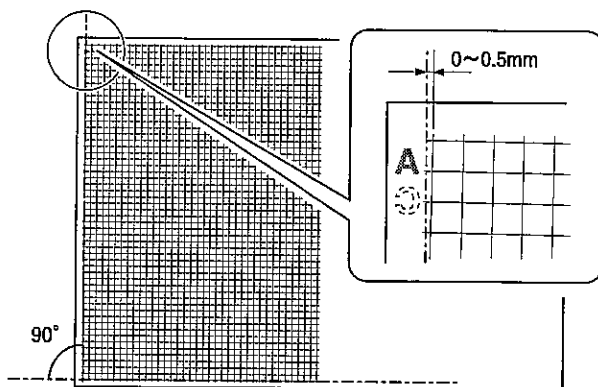
Make sure that the output satisfies the condition: $|c-d| \leq \pm 1 \text{ mm}$



[Check Method 2]



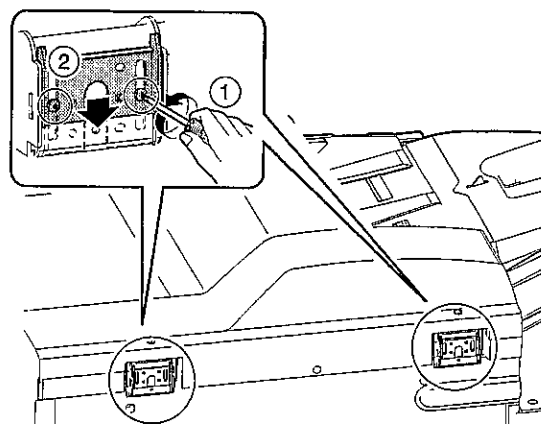
Check that the squareness of the main scanning direction print line for the longitudinal direction of paper is within 0.5mm.



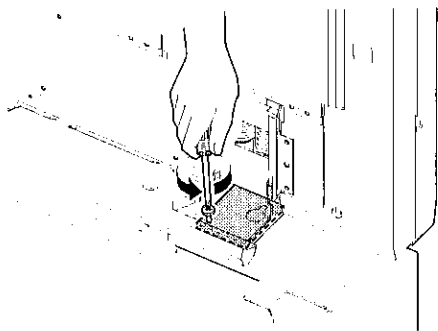
If the above requirement is met for the copied image of the paper's front side but not for the paper's back side, skip to step 4.

If the above requirement is not met for the paper's front side, then do step 3.

- 3) Loosen the hinge screws and lower the two attachments.

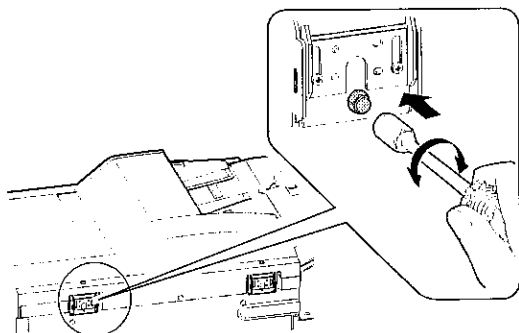


- 4) Open the SPF and loosen the screw.



- 5) Adjust by turning the SPF skew adjusting screw on the right side of the SPF rear frame.

Remove the hexagon cap nut of the SPF skew adjusting screw on the right side of the SPF hinge and loosen the fixing nut, then adjust by turning the SPF skew adjusting screw (hexagon screw).



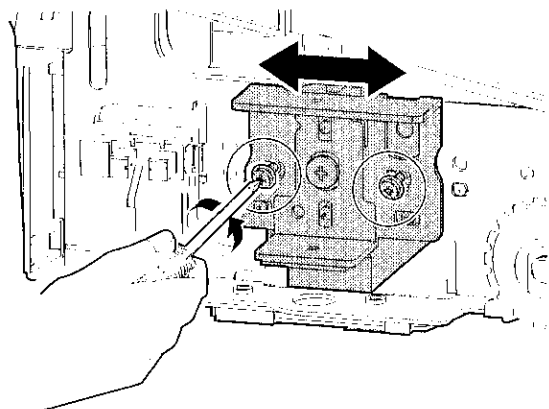
If $a < b$, then turn counterclockwise the SPF skew adjusting screw (hexagon screw). (When the main scanning direction print line is shifted to the left)

If $a > b$, then turn clockwise the SPF skew adjusting screw (hexagon screw). (When the main scanning direction print line is shifted to the right)

Repeat steps 2 to 5 until an acceptable result is obtained.

[If the copied image of the paper's back side is skewed beyond the acceptable level, do the following steps.]

- 6) Remove the SPF front cover.
7) Change the front frame side CIS fixing position (angle) to adjust the skew of the copied image of the paper's back side.
This adjustment should be done by loosening the CIS fixing screw on the SPF front side and then moving the fixing plate in the left or right direction.



If $c < d$, then shift the CIS fixing plate to the right. (When the main scanning direction print line is shifted to the left)

If $c > d$, then shift the CIS fixing plate to the left. (When the main scanning direction print line is shifted to the right)

Repeat steps 2 to 7 until an acceptable result is obtained.

ADJ 5 Adjusting the image focus

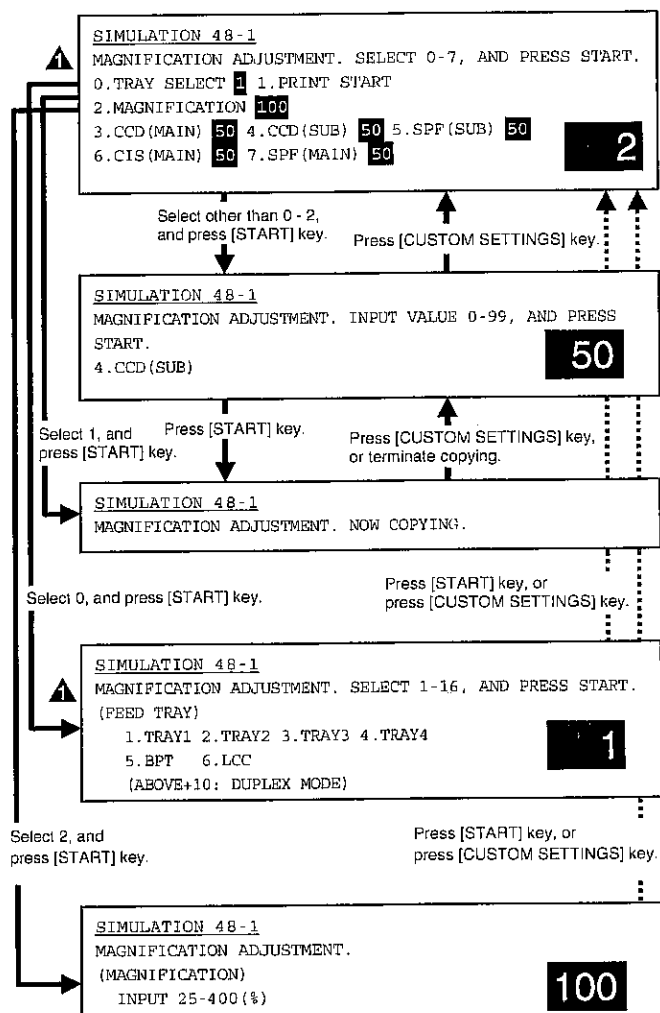
The result of this adjustment will affect all image scan modes (copy, scan, and fax).

ADJ 5A Adjust the image focus in original table mode and SPF front-face mode (CCD)

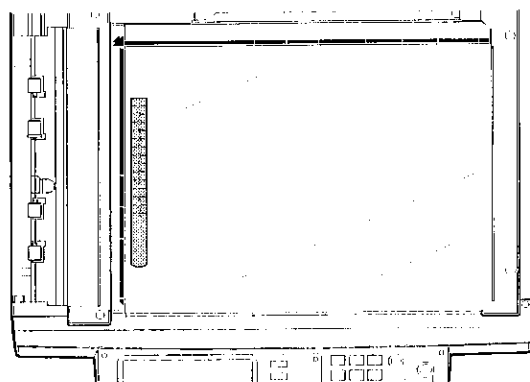
This adjustment is needed in the following situations:

- The CCD unit has been removed from the machine.
- The CCD unit has been replaced.
- Copied/scanned/faxed images are not correctly focused.

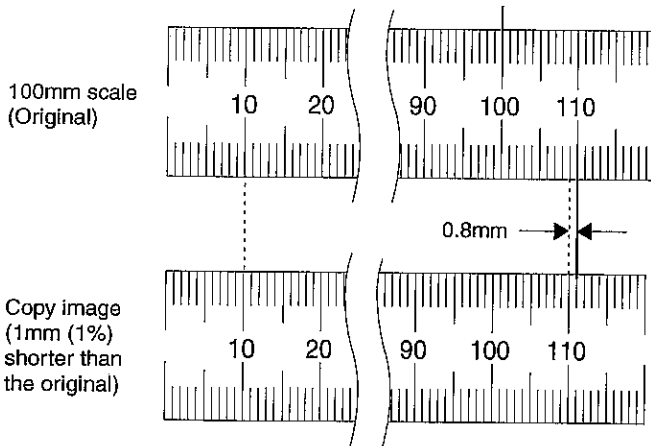
- 1) Go through the modes specified in Simulation 48-1.



- 2) Set the adjustment item CCD (MAIN) to 50 (default).
3) Place a scale on the original table as illustrated below.

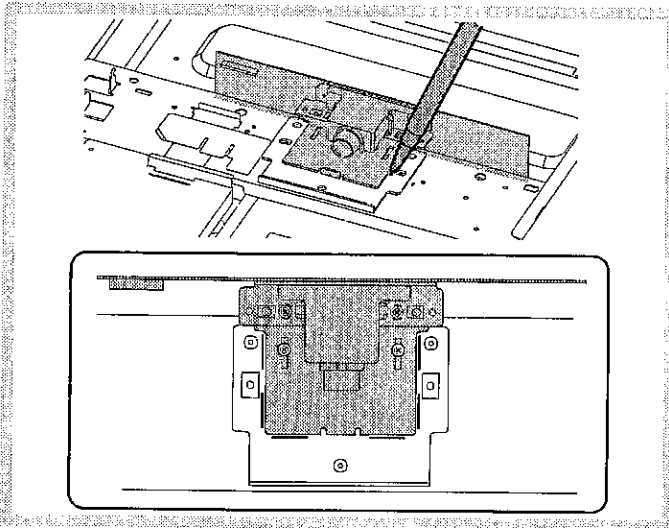


- 4) Make a normal copy on A4 paper.
- 5) Compare the copied image of the scale and the actual scale length in terms of length.

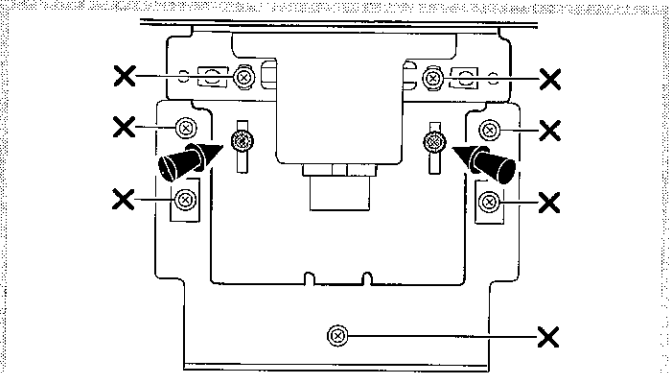


If the copied image of the scale is of almost the same length as the actual scale but is not satisfactorily focused, do the following steps.

- 6) Remove the table glass and dark box cover.
- 7) To prevent the CCD unit optical axis from being deviated, mark the CCD unit base as illustrated below.



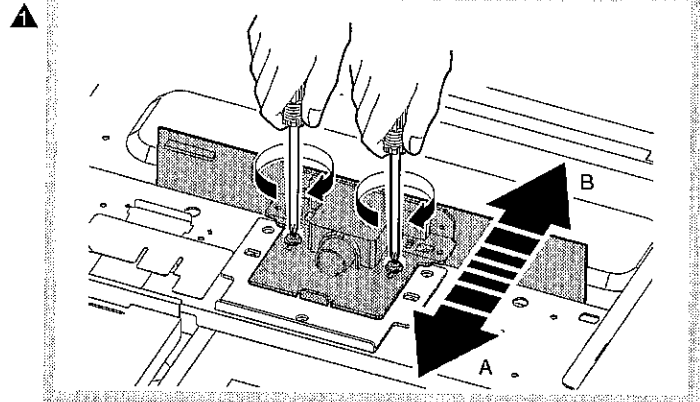
- 8) Loosen two fixing screws of the CCD unit.



Note: The screws cross-marked in the illustration must not be loosened.

Loosening these screws could possibly change the CCD unit base optical axis. Once the optical axis has been changed, it cannot be corrected through on-site adjustments. Solving such a problem requires the replacement of the entire scanner unit.

- 9) Slide the CCD unit in the arrow direction (CCD sub-scanning direction) to change its mounted position.



If the copied image is not satisfactorily focused and larger than the original, slide the unit in direction B.

If the copied image is not satisfactorily focused and smaller than the original, slide the unit in direction A.

Note: After adjusting the CCD unit position, fix the CCD unit so that it is in parallel with the marker line added in step 7, referring to the graduations on the front and rear frames sides of the CCD unit base.

Repeat steps 4 to 9 until the copied image of the scale is of almost the same size as the actual scale and the image is satisfactorily focused.

ADJ 5B Adjust the image focus in SPF back-face mode (CIS)

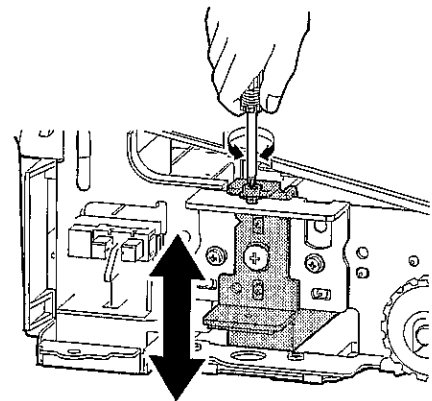
This adjustment is needed in the following situations:

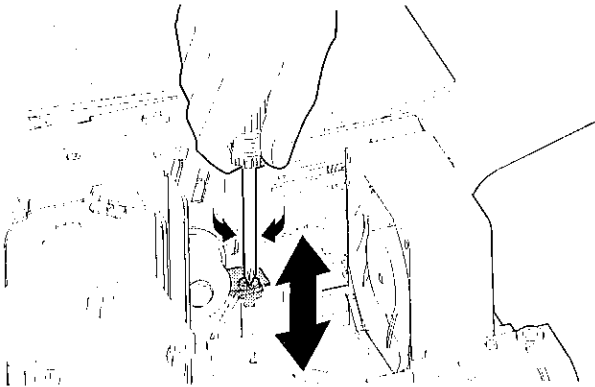
- The CIS unit has been removed.
- The CIS unit has been replaced.
- Copied/scanned/faxed images are not correctly focused.
- The SPF unit has been removed.
- The SPF unit has been replaced.

- 1) Make a duplex copy in SPF mode.
- 2) Make sure that the copied image on the back side of the paper is satisfactorily focused.

If the image is not satisfactorily focused, do the following steps.

- 3) Remove the rear frame and front frame cabinet of the SPF unit.
- 4) Adjust the focus by turning the CIS focus adjusting screws on the front and rear frame sides, respectively.

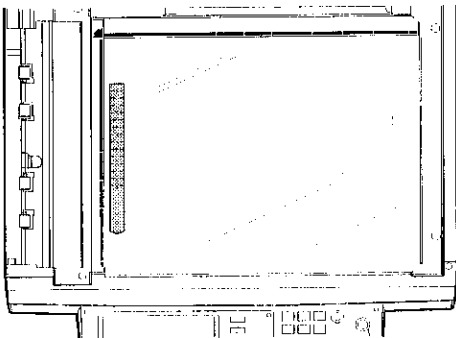




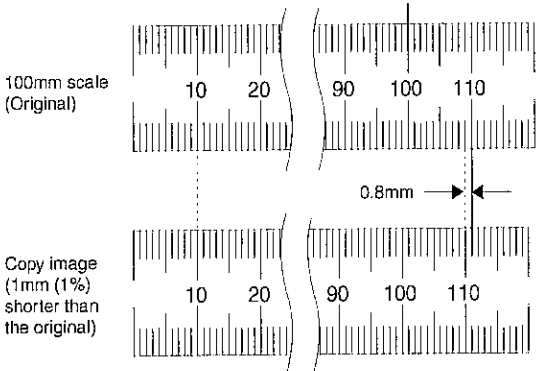
ADJ 6 Adjusting the image magnification

ADJ 6A Adjust the image magnification in the main scanning direction in original table mode (CCD)

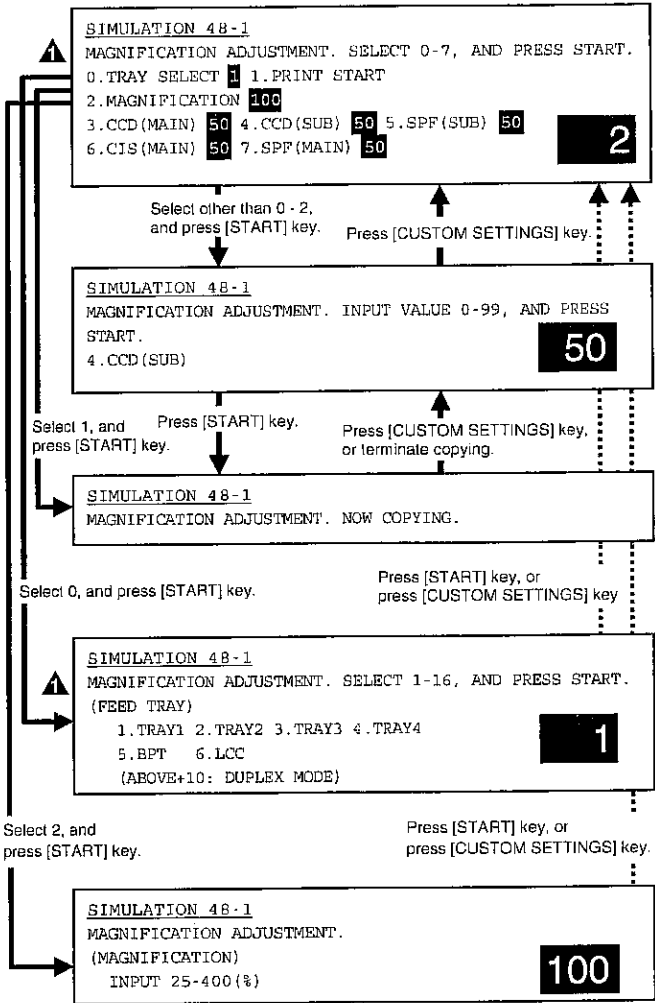
- This adjustment is needed in the following situations:
- The CCD unit has been removed from the machine.
 - The CCD unit has been replaced.
 - Images are not correctly magnified in the main scanning direction.
 - The MFP control PWB has been replaced.
 - The EEPROM on the MFP control PWB has been replaced.
 - The scan control PWB has been replaced.
 - The EEPROM on the scan control PWB has been replaced.
 - U2 trouble has occurred.
- 3) Place a scale on the original table in parallel with the main scanning direction, as illustrated below.



- 2) Make a normal copy on A4 paper.
- 3) Measure the lengths of the copied image of the scale and the actual scale.



- 4) Determine the image magnification factor using the following formula:
- Image magnification factor (%) = Copy dimension/original dimension x 100
- Example: Compare the copy and original dimensions by aligning the scale's 10 mm position with the copied image's 10 mm position.
- Image magnification factor (%) = 99 / 100 x 100 = 99
- If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.
- 5) Go through the modes specified in Simulation 48-1.



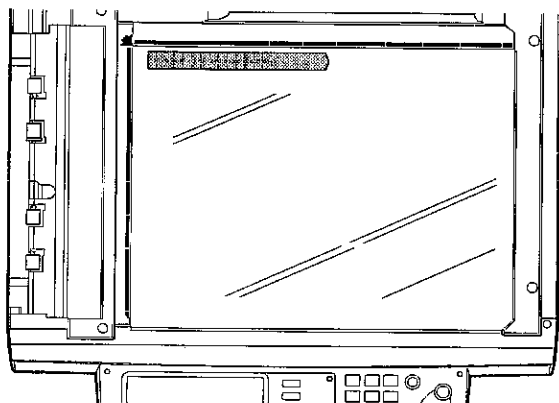
- 6) Select the number that corresponds to the adjustment item CCD (MAIN) using the numeric keypad.
- This adjustment item is intended to adjust the image magnification in the main scanning direction in original table mode (CCD).
- 7) Press the Start key
- 8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
- 9) Press the P or Start key
- Pressing the Start key starts copy operation as well as applying the adjustment value.
- Repeat steps 2 to 9 until the image magnification factor is satisfactory.

▲ ADJ 6B Adjust the image magnification in the sub-scanning direction in original table mode (CCD)

This adjustment is needed in the following situations:

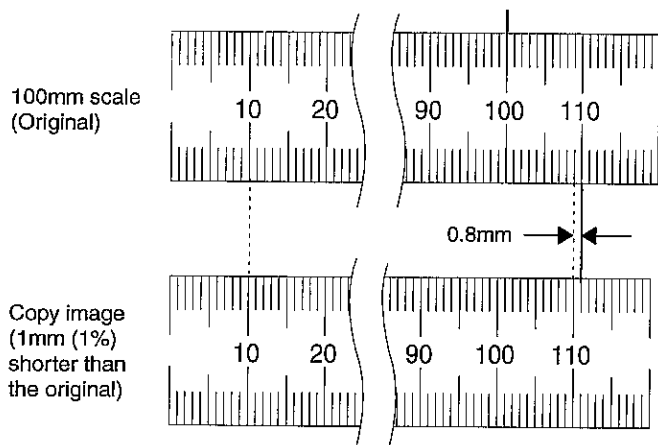
- The CCD unit has been removed from the machine.
- The CCD unit has been replaced.
- Images are not correctly magnified in the sub-scanning direction.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- U2 trouble has occurred.

1) Place a scale on the original table as illustrated below.



2) Make a normal copy on A4 paper.

3) Measure the lengths of the copied image of the scale and the actual scale.



4) Determine the image magnification factor using the following formula:

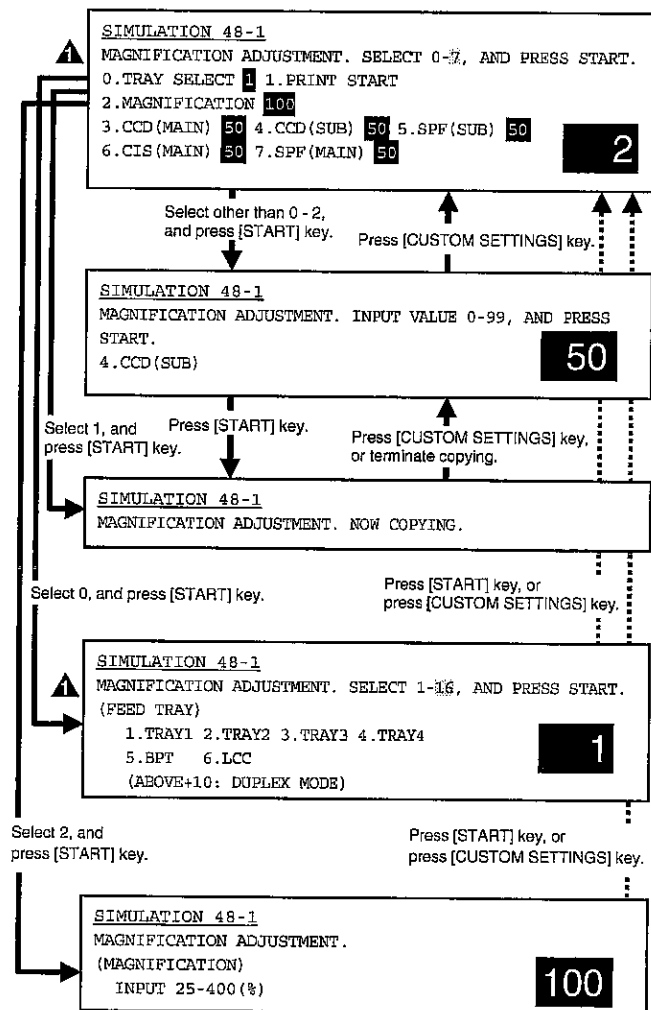
Image magnification factor (%) = Copy dimension/original dimension x 100

Example: Compare the copy and original dimensions by aligning the scale's 10 mm position with the copied image's 10 mm position.

Image magnification factor (%) = 99 / 100 x 100 = 99

If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.

5) Go through the modes specified in Simulation 48-1.



6) Select the number that corresponds to the adjustment item CCD (SUB) using the numeric keypad.

This adjustment item is intended to adjust the image magnification in the sub scanning direction in original table mode (CCD).

7) Press the Start key.

8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.

9) Press the P or Start key

Pressing the Start key starts copy operation as well as applying the adjustment value.

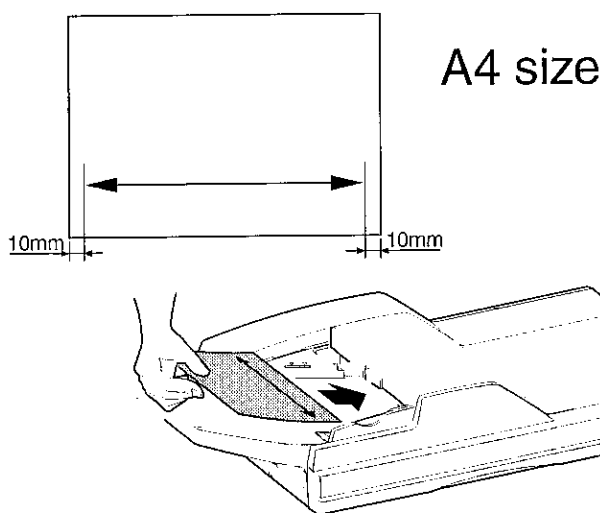
Repeat steps 2 to 9 until the image magnification factor is satisfactory.

ADJ 6C Adjust the image magnification in the main scanning direction in SPF front-face mode (CCD)

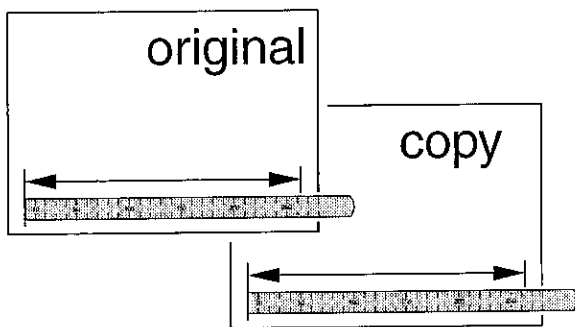
This adjustment is needed in the following situations:

- The CCD unit has been removed from the machine.
- The CCD unit has been replaced.
- Images are not correctly magnified in the main scanning direction.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- U2 trouble has occurred.

- 1) On the SPF original tray, place such an original as illustrated below.



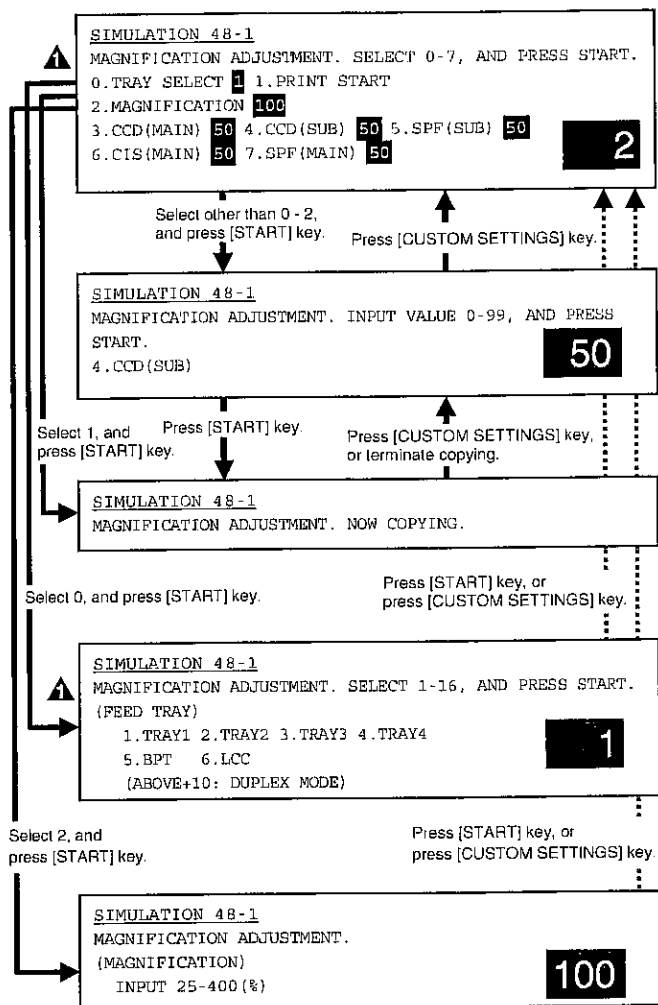
- 2) Make a normal copy on A4 paper.
- 3) Measure the lengths of the copied image and the original image.



- 4) Determine the image magnification factor using the following formula:

$$\text{Image magnification factor (\%)} = \frac{\text{Copy dimension}}{\text{original dimension}} \times 100$$

$$\text{Image magnification factor (\%)} = 99 / 100 \times 100 = 99$$
 If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.
- 5) Go through the modes specified in Simulation 48-1.



- 6) Using the numeric keypad, select the number that corresponds to the mode for which to make adjustments.

▲ Select the adjustment item that is intended to adjust the image magnification in the main scanning direction in SPF front-face mode (CCD). (SPF (MAIN))

- 7) Press the Start key
 - 8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
 - 9) Press the P or Start key
- Pressing the Start key starts copy operation as well as applying the adjustment value.

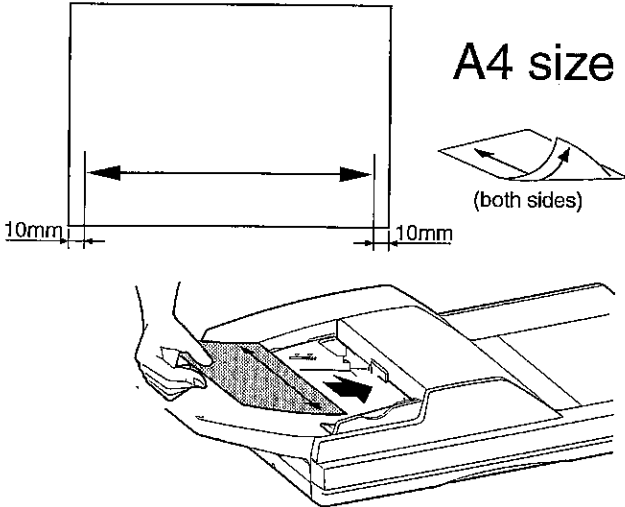
Repeat the above adjustments until an acceptable result is obtained.

ADJ 6D Adjust the image magnification in the main scanning direction in SPF back-face mode (CCD)

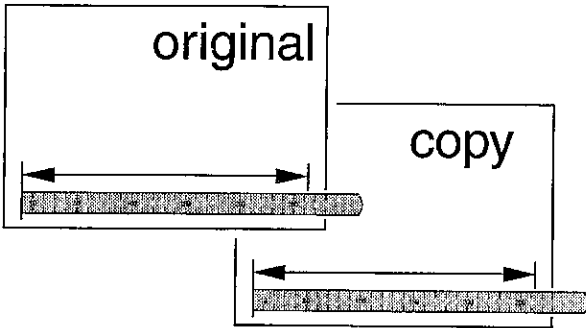
This adjustment is needed in the following situations:

- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- U2 trouble has occurred.
- Images are not correctly magnified in the main scanning direction.

- 1) On the SPF original tray, place such a duplex original as illustrated below.



- 2) Make a normal duplex copy on A4 paper.
3) Measure the lengths of the copied image (on the back side) and the original image.



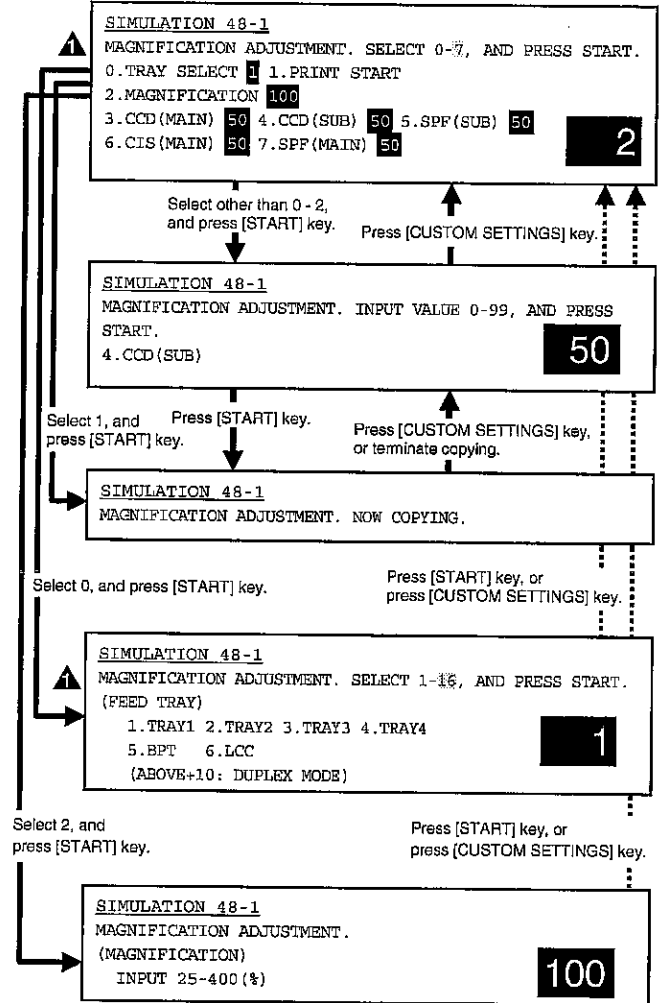
- 4) Determine the image magnification factor using the following formula:

Image magnification factor (%) = Copy dimension/original dimension x 100

Image magnification factor (%) = 99 / 100 x 100 = 99

If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.

- 5) Go through the modes specified in Simulation 48-1.



- 6) Select the number that corresponds to the adjustment item CIS (MAIN) using the numeric keypad.

▲ This adjustment item is intended to adjust the image magnification in the main scanning direction in SPF back-face mode (CIS). (CIS (MAIN))

- 7) Press the Start key
8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
9) Press the P or Start key
Pressing the Start key starts copy operation as well as applying the adjustment value.

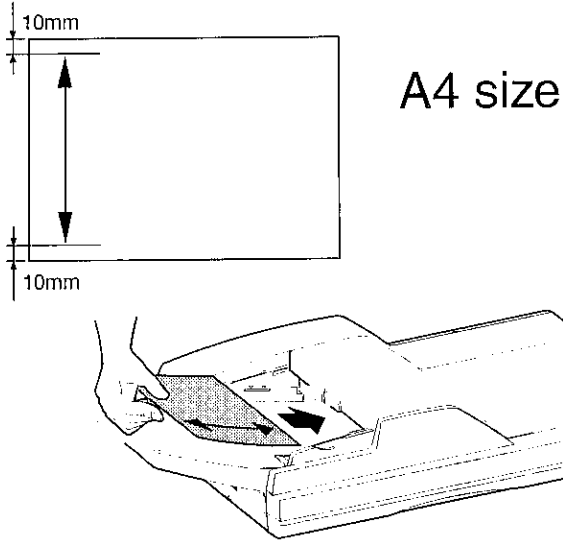
Repeat the above adjustments until an acceptable result is obtained.

ADJ 6E Adjust the image magnification in the sub-scanning direction in SPF mode

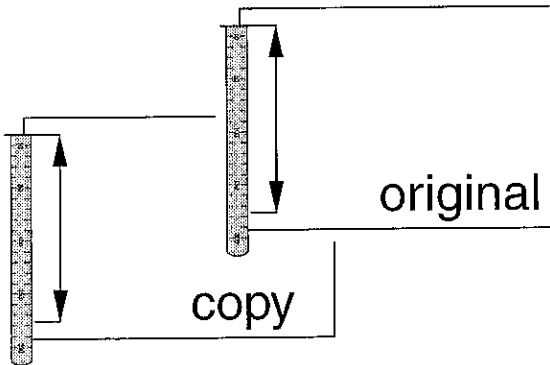
This adjustment is needed in the following situations:

- Images are not correctly magnified in the sub-scanning direction.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- U2 trouble has occurred.

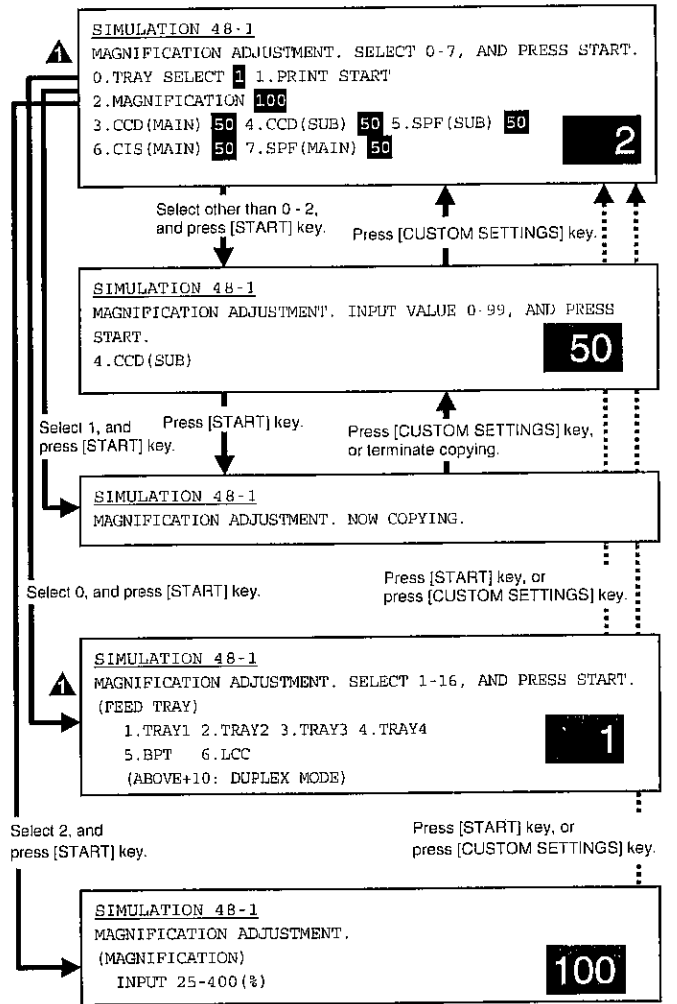
- 1) On the SPF original tray, place such an original as illustrated below.



- 2) Make a normal copy on A4 paper.
3) Measure the lengths of the copied image and the original image.



- 4) Determine the image magnification factor using the following formula:
Image magnification factor (%) = Copy dimension/original dimension x 100
Image magnification factor (%) = 99 / 100 x 100 = 99
If the image magnification factor is within the spec (100±0.8%), no adjustment is required; otherwise, do the following steps.
5) Go through the modes specified in Simulation 48-1.



- 6) Select the number that corresponds to the adjustment item SPF (SUB) using the numeric keypad.

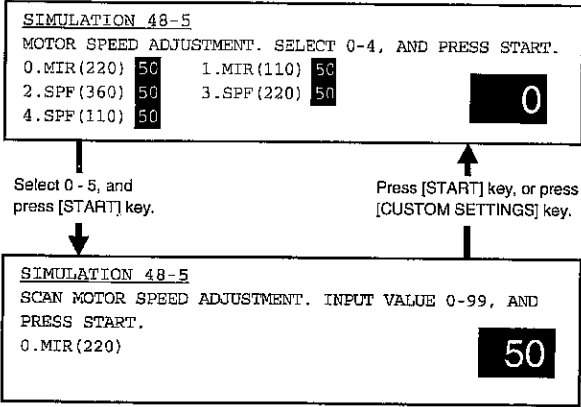
▲ This adjustment items is intended to adjust the image magnification in the sub-scanning direction in SPF mode. (SPF (SUB))

- 7) Press the Start key
8) Adjust the image magnification factor by entering an appropriate value through the numeric keypad.
9) Press the P or Start key
Pressing the Start key starts copy operation as well as applying the adjustment value.

Repeat the above adjustments until an acceptable result is obtained.

Note: After adjusting the image magnification in the sub-scanning direction through Simulation 48-1, do the following steps if making a copy at a different magnification factor fails to produce a correctly scaled copy.

1) Go through the modes specified in Simulation 48-5.



- 2) Using the numeric keypad, select the number that corresponds to the mode for which to make adjustments.
- 2) Press the Start key
- 3) Enter the copy adjustment value using the numeric keypad.
Make adjustments by changing the adjustment value for high revolution mode if the copy magnification is not correct for microcopies; or the adjustment value for low revolution mode if the copy magnification is not correct for blowbacks.
- 4) Press the Start key
This applies the adjustment value.

ADJ 7 Adjusting the image off-center

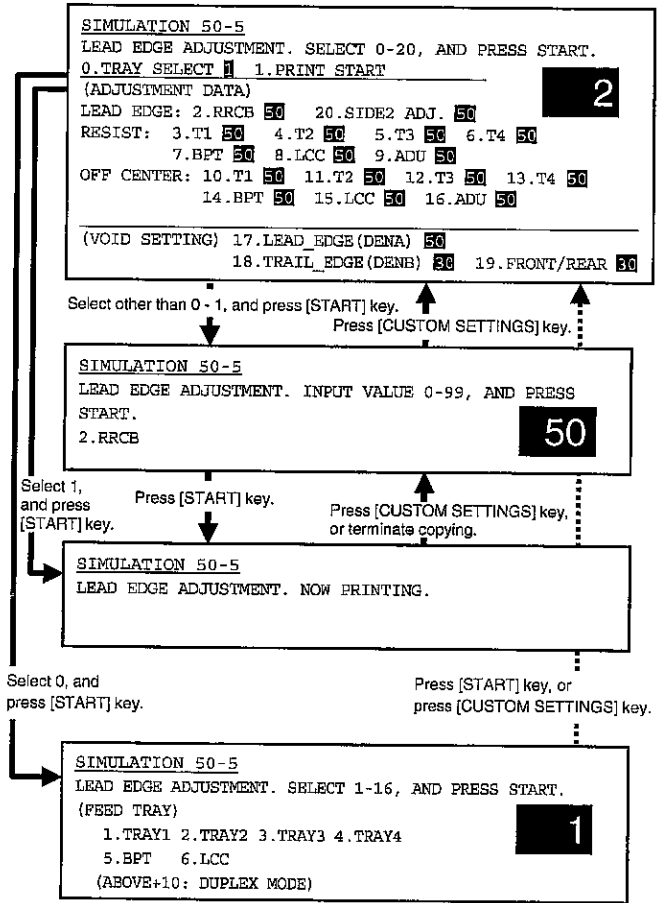
ADJ 7A Adjust the print image off-center (print engine section)

This adjustment is needed in the following situations:

- The paper feed section has been disassembled.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- The LSU has been replaced.
- U2 trouble has occurred.

(Print image off-center adjustment)

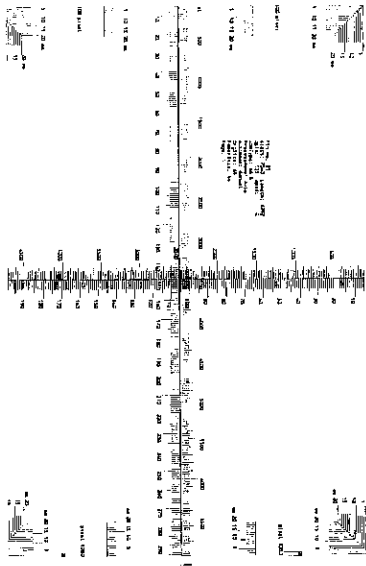
1) Go through the modes specified in Simulation 50-5.



| | Item | Set range | Default | |
|-----------------------------------|-------------------|--|------------------------|------------|
| | | | AR-M550N/U, AR-M620N/U | AR-M700N/U |
| 0 | TRAY SELECT | Paper feed tray selection (1 - 6) | - | - |
| 1 | PRINT START | Print start (Default) | - | - |
| (Lead edge adjustment value) | | | | |
| 2 | RRCB | Resist roller clutch ON timing adjustment value | 0 - 99 | 50 |
| 20 | SIDE2-ADJ. | Offset (adjustment) of the RRCB setting during rear print. | 1 - 99 | 50 |
| (Resist adjustment value) | | | | |
| 3 | TRAY1 | Tray 1 adjustment | 0 - 99 | 46 |
| 4 | TRAY2 | Tray 2 adjustment | | 46 |
| 5 | TRAY3 | Tray 3 adjustment | | 47 |
| 6 | TRAY4 | Tray 4 adjustment | | 47 |
| 7 | BPT | Manual feed tray adjustment | | 46 |
| 8 | LCC | Side LCC adjustment | | 46 |
| 9 | ADU | Adjustment when paper is fed again from ADU | | 43 |
| (Off-center set value) Self print | | | | |
| 10 | TRAY 1 | Tray 1 adjustment | - | - |
| 11 | TRAY 2 | Tray 2 adjustment | - | - |
| 12 | TRAY 3 | Tray 3 adjustment | - | - |
| 13 | TRAY 4 | Tray 4 adjustment | - | - |
| 14 | BPT | Manual feed tray adjustment | - | - |
| 15 | LCC | Side LCC adjustment | - | - |
| 16 | ADU | Adjustment when paper is fed again from ADU | - | - |
| (Void set value) | | | | |
| 7 | LEAD_EDGE (DENA) | Lead edge void set value | 0 - 99 | 35 |
| 8 | TRAIL_EDGE (DENB) | Rear edge void adjustment value | | |
| 9 | FRONT/REAR | Front/Rear void adjustment value | | |

- 2) Enter the number that corresponds to the paper feed tray that needs adjustments. (Choose from numbers 10 to 16.)
 - 3) Press the Start key
 - 4) Press the Start key
- A self-print pattern image is printed.
- Check the off-center of the printed self-print pattern image.
- If so, no adjustment is required.

Measure the void area dimensions in the front and rear frame directions, and make sure that the difference between the two dimensions is within ± 1.5 mm.



If the above requirement is not met, do the following steps.

- 5) Using the numeric keypad, change the adjustment value in steps of 0.1 mm. A larger setting shifts the printed image toward the front side.
 - 6) Press the P or Start key. Pressing the Start key starts print operation as well as applying the adjustment value.
- Check the off-center of the printed self-print pattern image.
- Repeat steps 5 to 6 until an acceptable result is obtained.

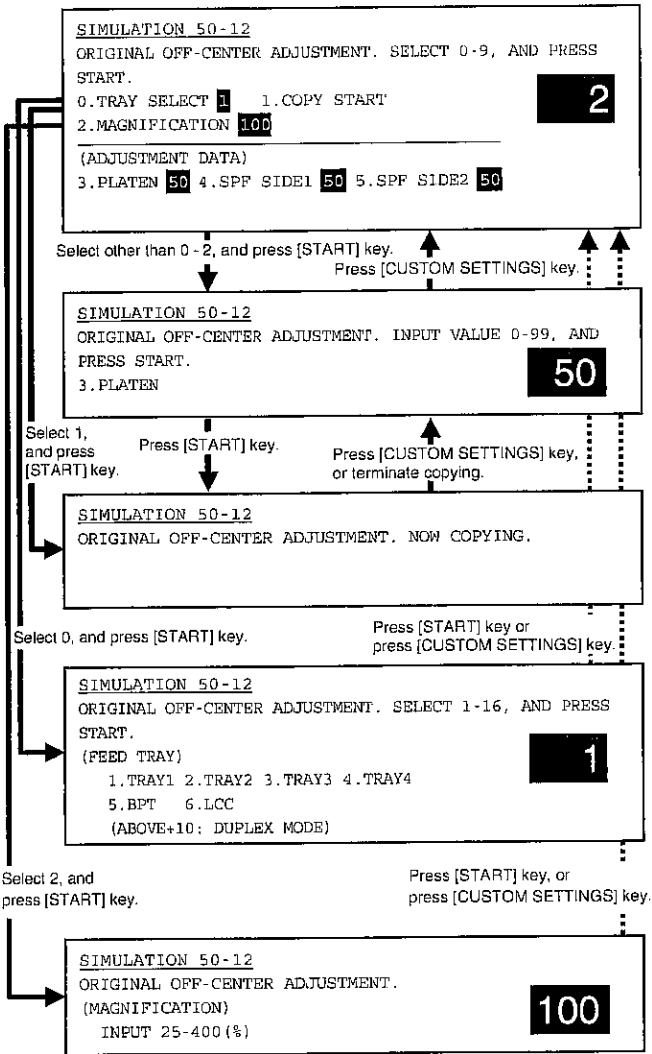
ADJ 7B Adjust the scanned image off-center in original table mode (scan section)

This adjustment is needed in the following situations:

- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- U2 trouble has occurred.

(Adjustment mode selection)

- 1) Go through the modes specified in Simulation 50-12.



| Item | | | Set range | Default |
|-------------------------------|---------------|------------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 1 - 6 | — |
| 1 | COPY START | Copy START (Default) | — | — |
| 2 | MAGNIFICATION | Print magnification ratio | 25 - 400% | 100 |
| (Off-center adjustment value) | | | | |
| 3 | PLATEN | OC mode adjustment | 0 - 99 | 50 |
| 4 | SPF SIDE1 | SPF front surface adjustment | | |
| 5 | SPF SIDE2 | SPF back surface adjustment | | |

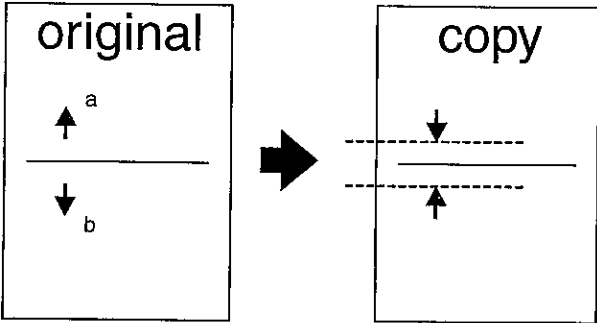
- 2) Using the numeric keypad, select the adjustment item PLATEN, which is intended to adjust the off-center in original table mode.
- 3) Press the Start key

(Scan off-center adjustment)

- 1) Place an original on the original table.
- 2) Press the Start key

Check the off-center of the printed image.

If the off-center is 0±4.0 mm, no adjustment is required.



If the above requirement is not met, do the following steps.

- 3) Using the numeric keypad, change the adjustment value in steps of 0.1 mm to adjust the scan image off-center. A larger setting shifts the printed image toward the rear side.
- 4) Press the P or Start key.
Pressing the Start key starts copy operation as well as applying the adjustment value.
- 5) Check the off-center of the printed image.
Repeat the above adjustments until an acceptable result is obtained.

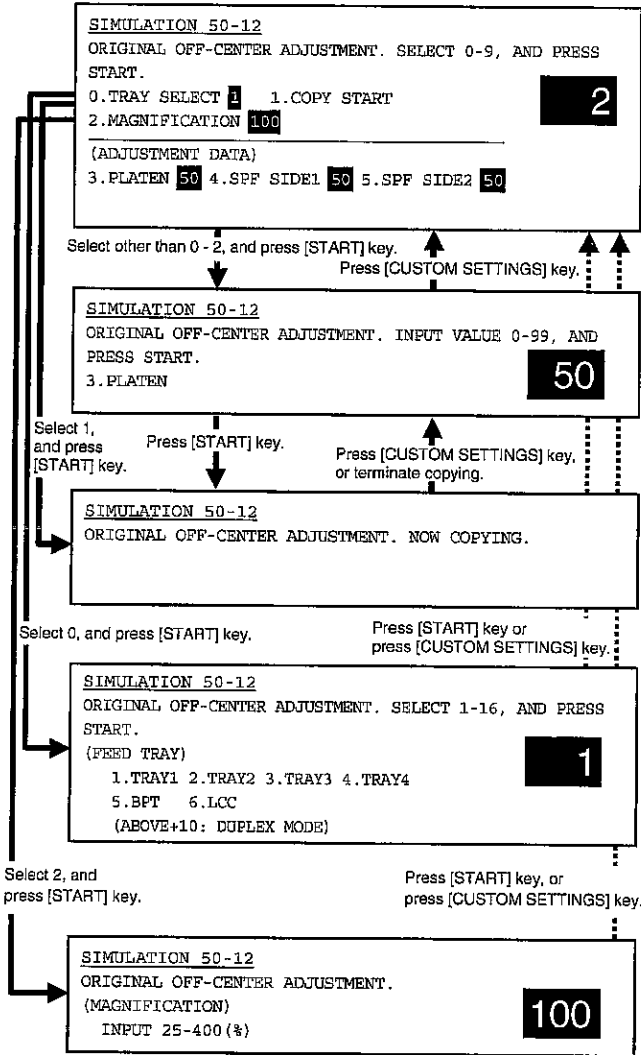
ADJ 7C Adjust the scanned image off-center in SPF front-face mode (scan section)

This adjustment is needed in the following situations:

- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- U2 trouble has occurred.
- The SPF section has been disassembled.
- The SPF unit has been replaced.

(Adjustment mode selection)

- 1) Go through the modes specified in Simulation 50-12.

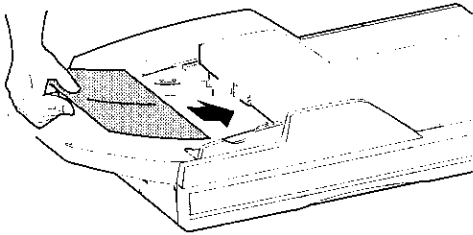
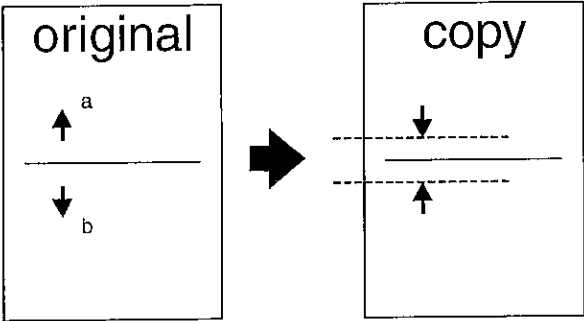


| Item | | | Set range | Default |
|-------------------------------|---------------|------------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 1 - 6 | — |
| 1 | COPY START | Copy START (Default) | — | — |
| 2 | MAGNIFICATION | Print magnification ratio | 25 - 400% | 100 |
| (Off-center adjustment value) | | | | |
| 3 | PLATEN | OC mode adjustment | 0 - 99 | 50 |
| 4 | SPF SIDE1 | SPF front surface adjustment | | |
| 5 | SPF SIDE2 | SPF back surface adjustment | | |

- 2) Using the numeric keypad, select the adjustment item SPF SIDE1, which is intended to adjust the off-center in SPF front-face mode.
- 3) Press the Start key

(Scan off-center adjustment)

- 1) Place an original on the SPF original tray.
- 2) Press the Start key
Check the off-center of the printed image.
If the off-center is 0 ± 2.5 mm, no adjustment is required.



If the above requirement is not met, do the following steps.

- 3) Using the numeric keypad, change the adjustment value in steps of 0.1 mm to adjust the scan image off-center. A larger setting shifts the printed image toward the rear side.
- 4) Press the P or Start key.
Pressing the Start key starts copy operation as well as applying the adjustment value.
- 5) Check the off-center of the printed image.
Repeat the above adjustments until an acceptable result is obtained.

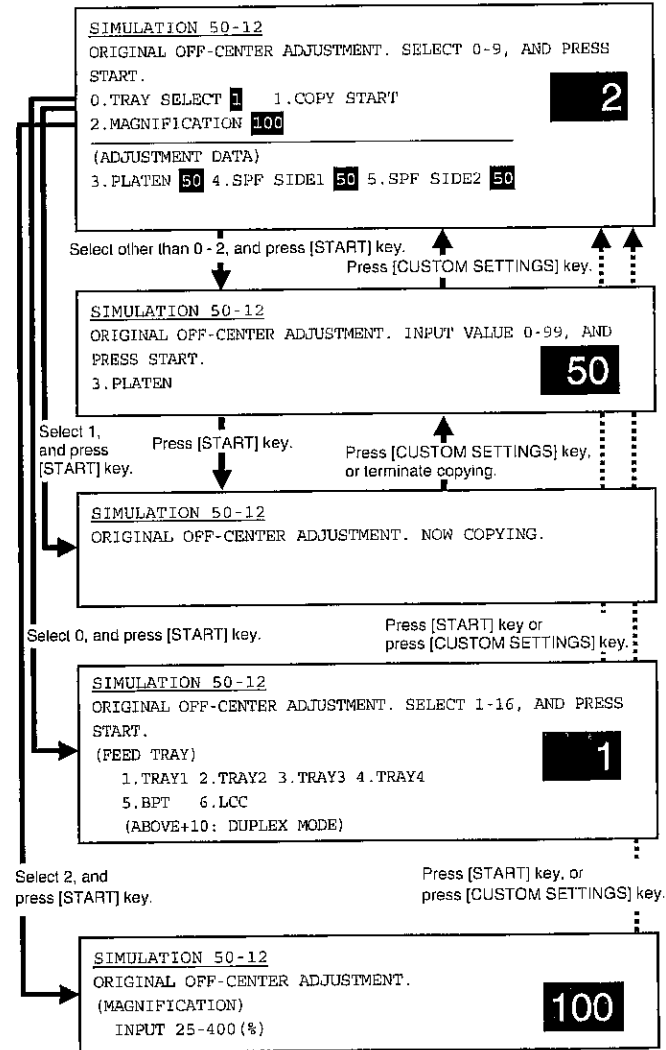
ADJ 7D Adjust the scanned image off-center in SPF back-face mode (scan section)

This adjustment is needed in the following situations:

- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- U2 trouble has occurred.
- The SPF section has been disassembled.
- The SPF unit has been replaced.

(Adjustment mode selection)

- 1) Go through the modes specified in Simulation 50-12.



| Item | | | Set range | Default |
|-------------------------------|---------------|------------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 1 - 6 | — |
| 1 | COPY START | Copy START (Default) | — | — |
| 2 | MAGNIFICATION | Print magnification ratio | 25 - 400% | 100 |
| (Off-center adjustment value) | | | | |
| 3 | PLATEN | OC mode adjustment | 0 - 99 | 50 |
| 4 | SPF SIDE1 | SPF front surface adjustment | | |
| 5 | SPF SIDE2 | SPF back surface adjustment | | |

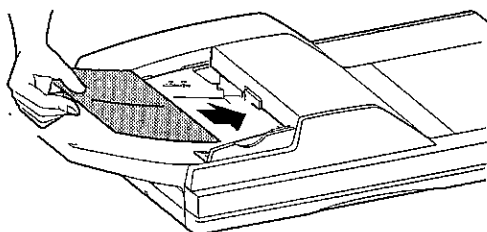
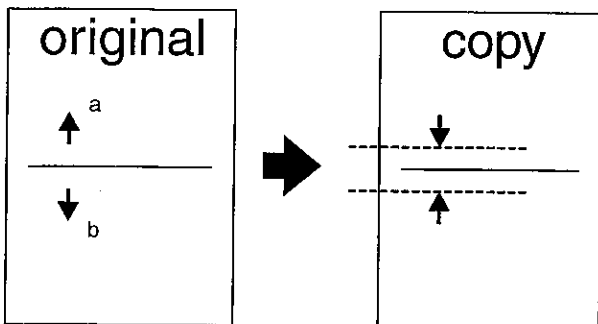
- 2) Using the numeric keypad, select the adjustment item SPF SIDE2, which is intended to adjust the off-center in SPF back-face mode.
- 3) Press the Start key

(Scan off-center adjustment)

- 1) Place a duplex document in the SPF original tray.
- 2) Press the Start key

Since the front side and back side images are copied onto separate sheets, check the off-center of the back side image.

▲ If the off-center is 0±2.7 mm, no adjustment is required.



If the above requirement is not met, do the following steps.

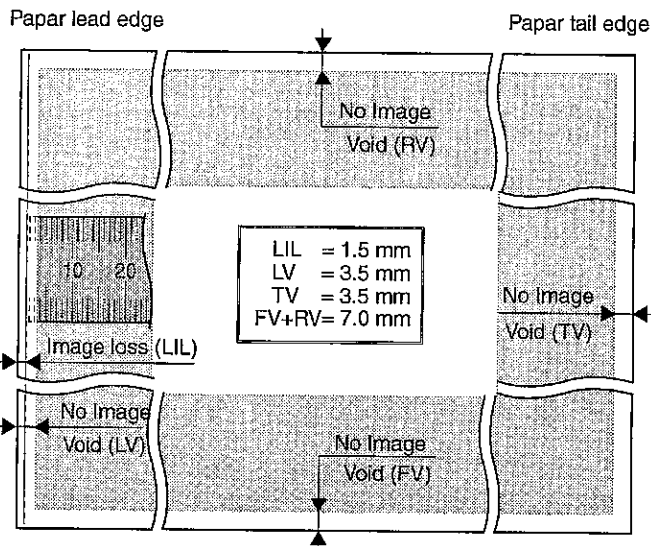
- 3) Using the numeric keypad, change the adjustment value in steps of 0.1 mm to adjust the scan image off-center. A larger setting shifts the printed image toward the front side.
- 4) Press the P or Start key.
Pressing the Start key starts copy operation as well as applying the adjustment value.
- 5) Check the off-center of the printed image.
Repeat the above adjustments until an acceptable result is obtained.

ADJ 8 Adjusting the image position, image loss, and void area

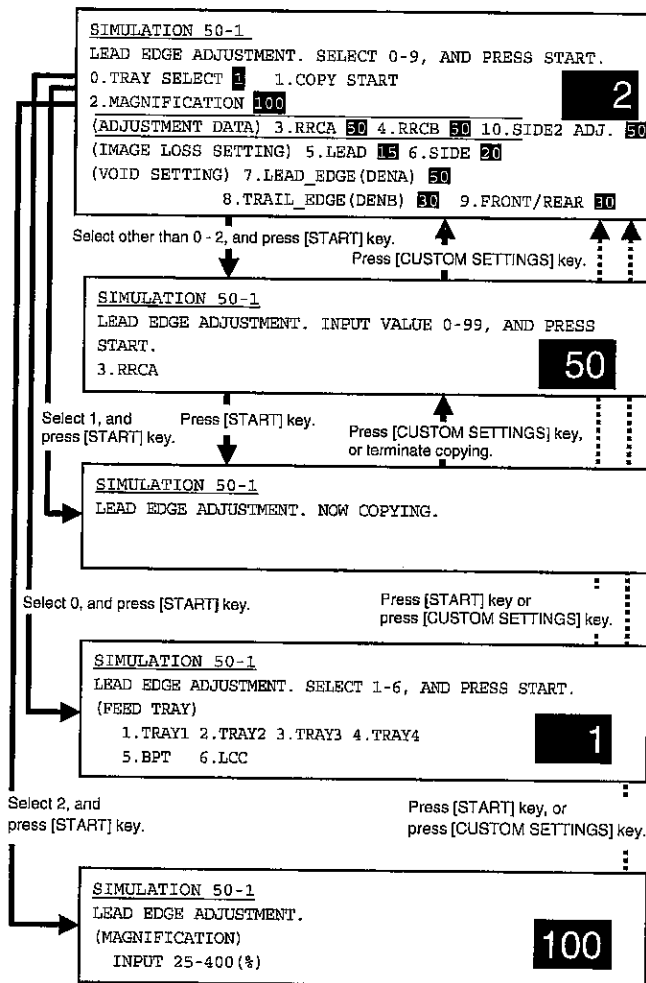
ADJ 8A Adjust copied image loss/void area in original table mode

This adjustment is needed in the following situations:

- The paper feed section has been disassembled.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- The LSU has been replaced.
- U2 trouble has occurred.



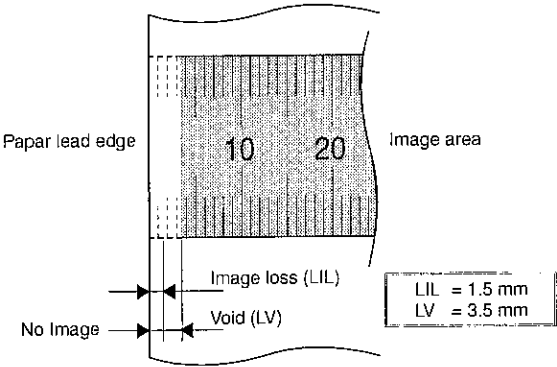
- 1) Go through the modes specified in Simulation 50-1.



| Item | Content | Set range | Default |
|------------------------------|-------------------|--|-----------|
| 0 | TRAY SELECT | Paper feed tray selection | 1 - 6 |
| 1 | COPY START | Copy START (Default) | — |
| 2 | MAGNIFICATION | Print magnification ratio | 25 - 400% |
| (Lead edge adjustment value) | | | |
| 3 | RRCA | Document scan start position | 0 - 99 |
| 4 | RRCB | Resist roller clutch ON timing adjustment value | 50 |
| 10 | SIDE2-ADJ. | Offset (adjustment) of the RRCB setting during rear print. | 1 - 99 |
| | | | 50 |
| (Image loss set value) | | | |
| 5 | LEAD | Lead edge image loss set value | 0 - 99 |
| 6 | SIDE | Side image loss set value | 15 |
| | | | 20 |
| (Void set value) | | | |
| 7 | LEAD_EDGE (DENA) | Lead edge void set value | 0 - 99 |
| 8 | TRAIL_EDGE (DENB) | Rear edge void adjustment value | 35 |
| 9 | FRONT/REAR | Front/Rear void adjustment value | |

(Leading edge image loss/void area adjustment)

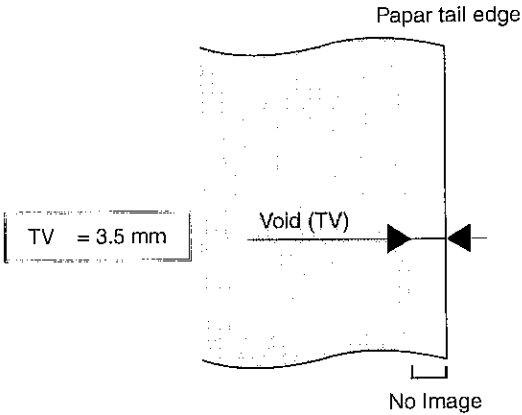
- Set the adjustment values for leading edge image loss and leading edge void as follows:
(Standard setting)
Leading edge image loss: 1.5 mm (LEAD:15)
Leading edge void: 3.5mm (DENA:35)
 - Set the adjustment value for (LEAD) to 15 by entering "15" into the (LEAD) adjustment value field and then pressing the P key.
 - Set the adjustment value for (DENA) to 35 by entering "35" into the (DENA) adjustment value field and then pressing the P key.
- Make a copy at 100% magnification by entering "100" into the (MAGNIFICATION) field and then pressing the Start key, and check the leading edge void area and image loss.



- If the leading edge image loss and void area are not at acceptable levels, do the following steps.
(The adjustment value should be changed in steps of 1msec/0.1mm.)
- If the leading edge void area is not 3.5 mm:
Repeat the process of changing the (RRCB) adjustment value and then pressing the Start key until attaining an acceptable level. (The adjustment value should be change in steps of 1msec/step, 0.1mm/step.)
 - If the leading edge image loss is not 1.5mm:
Repeat the process of changing the (RRCA) adjustment value, in steps of 0.1 mm, and then pressing the Start key until attaining an acceptable level. (The adjustment value should be changed in steps of 0.2mm.)
- Repeat the above adjustments until acceptable results are obtained.

(Trailing edge void area adjustment)

- Make a copy at 100% magnification by entering "100" into the (MAGNIFICATION) field and then pressing the Start key, and check the trailing edge void area.
(Standard setting) Trailing edge void area: 3.5 mm



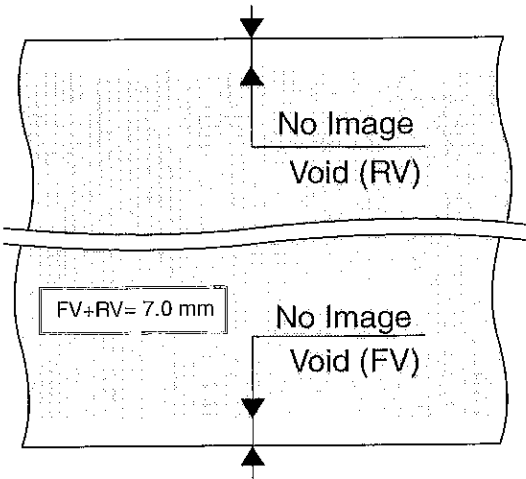
- If the trailing edge void area is not at an acceptable level, do the following steps.
- Repeat the process of changing the (TRAIL EDGE) adjustment value and then pressing the Start key until attaining an acceptable level.
Repeat the above adjustments until acceptable results are obtained.

(Front/rear frame direction image loss adjustment)

- Set the (SIDE) adjustment value to 20 by entering "20" into the (SIDE) adjustment value field and then pressing the P key.
Note that changing this adjustment value shifts the image position in the front/rear frame direction.

(Front/rear frame direction void area)

- Make a copy at 100% magnification by entering "100" into the (MAGNIFICATION) field and then pressing the Start key, and check the front/rear frame direction void area.
(Standard settings)
Front frame side void area = 3.5 mm, rear frame side void area = 3.5 mm, sum of front/rear frame direction void area = 7.0 mm



- If the front/rear frame direction void area is not at an acceptable level, do the following steps.
- Repeat the process of changing the (FRONT/REAR) adjustment value and then pressing the Start key until attaining an acceptable level.
Repeat the above adjustments until acceptable results are obtained.
- Note: If the front and rear frame side void areas are not equal, adjust the image off-center position using Simulation 50-5.

ADJ 8B**Adjust the original scan start position
(adjust the scanner read position in
SPF-mode front face scan)**

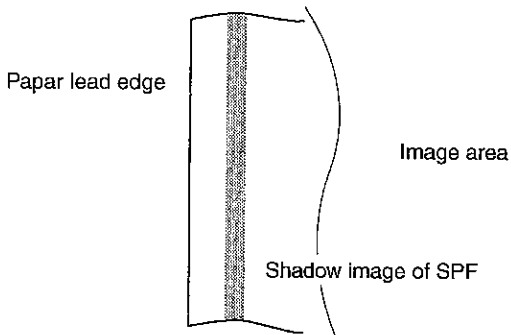
This adjustment is needed in the following situations:

- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- U2 trouble has occurred.
- The SPF section has been disassembled.
- The SPF unit has been replaced.

This adjustment is intended to adjust the scanner read position in SPF-mode front face scan.

An incorrect adjustment would deviate the scanner stop position from the required position, thus possibly causing a shadow of the original table to appear at the leading edge of an image generated by SPF (front-face) mode scan.

- 1) Make a copy in SPF (front-face) mode, and make sure that the printed image at the leading edge of the copied image is free from shadows.



If the printed image at the leading edge of the copied image contains a shadow of the original table, then do the following steps.

- 2) Go through the modes specified in Simulation 53-8.

SIMULATION 53-8

SPF SCANNING POSITION ADJUSTMENT. PRESS START.

2. MANUAL **25**

Select 2, and
press [START] key.

Press [START] key, or
press [CUSTOM SETTINGS] key.

SIMULATION 53-8

SPF SCANNING POSITION ADJUSTMENT. INPUT VALUE 1-70, AND
PRESS START.

2. MANUAL

25

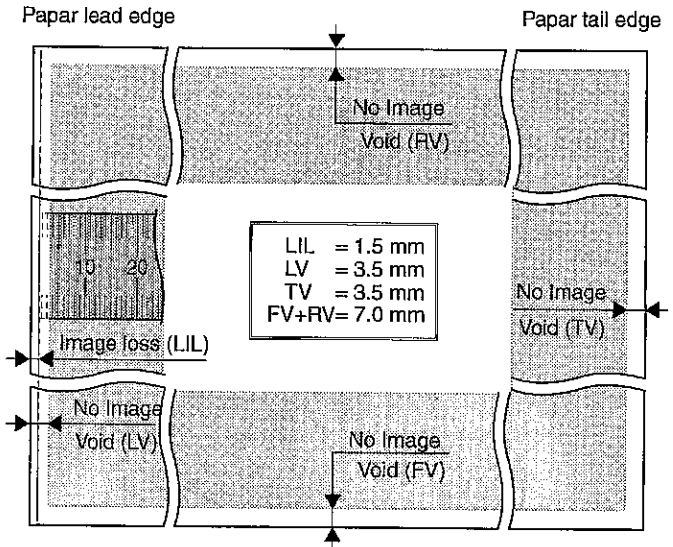
- 3) Enter the adjustment value and press the Start key.

Repeat the above adjustments until an acceptable result is obtained.

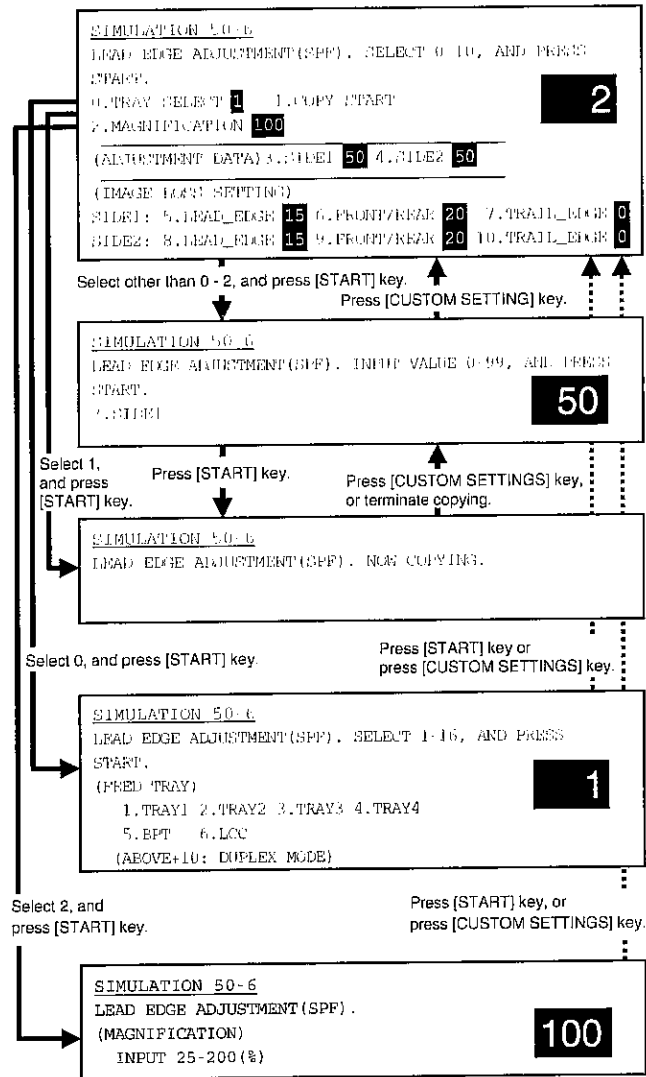
ADJ 8C**Adjust the copied image loss/void area
in SPF mode**

This adjustment is needed in the following situations:

- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scan control PWB has been replaced.
- The EEPROM on the scan control PWB has been replaced.
- The scanner (reading) section has been disassembled.
- The scanner (reading) unit has been replaced.
- U2 trouble has occurred.
- The SPF section has been disassembled.
- The SPF unit has been replaced.



1) Go through the modes specified in Simulation 50-6.



(Leading edge image loss adjustment)

1) Set the adjustment values for leading edge image loss for the front and back sides as follows:

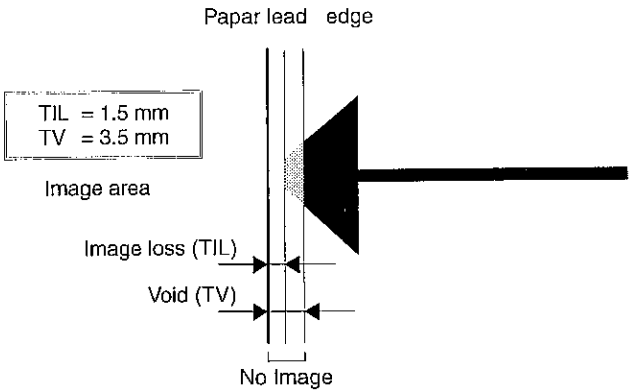
(Standard setting)

5 LEAD_EDGE: 15
8 LEAD_EDGE: 15

Paper leading edge void: 3.5mm (DENA:35)

- Set the adjustment value for "5 LEAD_EDGE" and "8 LEAD_EDGE" to 15 by entering "15" into the (LEAD_EDGE) adjustment value field and then pressing the P key.

2) In SPF mode, make a duplex copy at 100% magnification, and make sure that the leading edge image loss is 1.5 mm for both the front and back sides. (Select duplex mode from the paper selection mode as described in Simulation 50-6). (Enter "100" into the (MAGNIFICATION) field, and then press the start key).



If an acceptable result is not obtained, do the following steps.

3) Repeat the process of changing the (SIDE1 & SIDE2) adjustment values and then pressing the Start key until attaining an acceptable level.

SIDE1: Adjustment value for the position at which to read the leading edge of the original in SPF front side mode.

SIDE2: Adjustment value for the position at which to read the leading edge of the original in SPF back side mode.

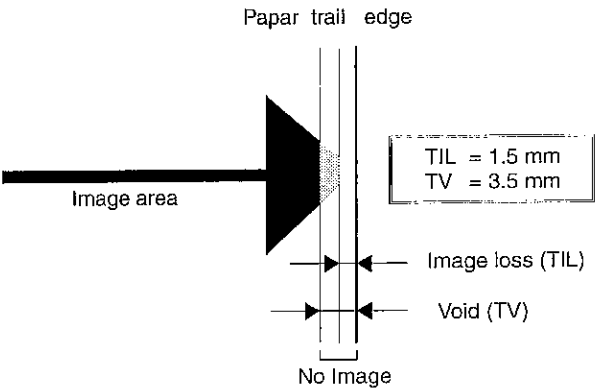
(The adjustment value should be changed in steps of 0.1 mm.)

(The timing in which to start reading the image should be determined based on the timing in which detector SPPD4 detects the leading edge of the original.)

Repeat steps 2 to 3 until an acceptable result is obtained.

(Trailing edge image loss adjustment)

1) Select duplex mode from paper selection mode as described in Simulation 50-6, enter "100" into the (MAGNIFICATION) field, and then press the Start key to make a duplex copy at 100% magnification in SPF mode, and make sure that the trailing edge image loss is 1.5 mm for both front and back sides.



| Item | | | Set range | Default |
|--------------------------------|---------------|---|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 1 - 6 | - |
| 1 | COPY START | Copy START (Default) | - | - |
| 2 | MAGNIFICATION | Print magnification ratio | 25 - 200% | - |
| (Lead edge adjustment value) | | | | |
| 3 | SIDE1 | Front surface document scan start position adjustment value | 0 - 99 | 50 |
| 4 | SIDE2 | Back surface document scan start position adjustment value | | |
| (Image loss set value: SIDE 1) | | | | |
| 5 | LEAD_EDGE | Front surface lead edge image loss set value | 0 - 99 | 15 |
| 6 | FRONT_REAR | Front surface side edge image loss set value | | 20 |
| 7 | TRAIL_EDGE | Front surface rear edge image loss set value | 0 - 20 | 0 |
| (Image loss set value: SIDE 2) | | | | |
| 8 | LEAD_EDGE | Back surface lead edge image loss set value | 0 - 99 | 15 |
| 9 | FRONT_REAR | Back surface side edge image loss set value | | 20 |
| 10 | TRAIL_EDGE | Back surface rear edge image loss set value | 0 - 20 | 0 |

If an acceptable result is not obtained, do the following steps.

- 2) Repeat the process of changing the (TRAIL EDGE) adjustment value and then pressing the Start key until attaining an acceptable level.

Repeat the above adjustments until an acceptable result is obtained.

(Front/rear frame direction image loss adjustment)

- 1) Set the (FRONT/REAR) adjustment value to 20 by entering "20" into the (FRONT/REAR) adjustment value field and then pressing the P key.

Note that changing this adjustment value shifts the image position in the front/rear frame direction.

ADJ 8D Adjust the image loss in scanner mode

- 1) Go through the modes specified in Simulation 50-27.

SIMULATION 50-27
ORIGINAL IMAGE LOSS SETTING(FAX/SCN). SELECT 1-18, AND PRESS START.

[FAX]

| | | | | | |
|--------------------|---|---------------------|---|---------------------|---|
| 1. OC (LEAD_EDGE) | 0 | 2. OC (FRONT/REAR) | 0 | 3. OC (TRAIL_EDGE) | 0 |
| 4. SPF (LEAD_EDGE) | 0 | 5. SPF (FRONT/REAR) | 0 | 6. SPF (TRAIL_EDGE) | 0 |
| 7. CIS (LEAD_EDGE) | 0 | 8. CIS (FRONT/REAR) | 0 | 9. CIS (TRAIL_EDGE) | 0 |

[SCN]

| | | | | | |
|---------------------|---|----------------------|---|----------------------|---|
| 10. OC (LEAD_EDGE) | 0 | 11. OC (FRONT/REAR) | 0 | 12. OC (TRAIL_EDGE) | 0 |
| 13. SPF (LEAD_EDGE) | 0 | 14. SPF (FRONT/REAR) | 0 | 15. SPF (TRAIL_EDGE) | 0 |
| 16. CIS (LEAD_EDGE) | 0 | 17. CIS (FRONT/REAR) | 0 | 18. CIS (TRAIL_EDGE) | 0 |

Press [START] key.

Press [CUSTOM SETTINGS] key.

SIMULATION 50-27
ORIGINAL IMAGE LOSS SETTING(FAX/SCN). INPUT 0-10, AND PRESS START.

1. OC (LEAD_EDGE)

0

| Item | | | Set range | Default |
|--------------|------------------|---------------|----------------------|------------|
| FAX send | | | | |
| 1 | OC (LEAD_EDGE) | OC lead edge | 0 - 10 (Unit 1mm) | 3 (3mm) |
| 2 | OC (FRONT/REAR) | OC side | | |
| 3 | OC (TRAIL_EDGE) | OC rear edge | | |
| 4 | SPF (LEAD_EDGE) | SPF lead edge | | |
| 5 | SPF (FRONT/REAR) | SPF side | | |
| 6 | SPF (TRAIL_EDGE) | SPF rear edge | | |
| 7 | CIS (LEAD_EDGE) | CIS lead edge | | |
| 8 | CIS (FRONT/REAR) | CIS side | | |
| 9 | CIS (TRAIL_EDGE) | CIS rear edge | | |
| Scanner mode | | | | |
| 10 | OC (LEAD_EDGE) | OC lead edge | 0 - 10 (Unit 1mm) | 0 (0mm) |
| 11 | OC (FRONT/REAR) | OC side | | |
| 12 | OC (TRAIL_EDGE) | OC rear edge | | |
| 13 | SPF (LEAD_EDGE) | SPF lead edge | | |
| 14 | SPF (FRONT/REAR) | SPF side | | |
| 15 | SPF (TRAIL_EDGE) | SPF rear edge | | |
| 16 | CIS (LEAD_EDGE) | CIS lead edge | | |
| 17 | CIS (FRONT/REAR) | CIS side | | |
| 18 | CIS (TRAIL_EDGE) | CIS rear edge | | |

- 2) Using the numeric keypad, enter the number that corresponds to the scanner mode adjustment item.

- 3) Press the Start key

- 4) Enter the adjustment value using the numeric keypad.

- 5) Press the Start key

(The adjustment value should be changed in steps of 1.0mm.)

Scanned images must be visually checked for image loss.

Note: Make adjustments in the same manner as in ADJ 8A and ADJ 8C.

ADJ 8E Adjust the image loss for images sent in fax mode

- 1) Go through the modes specified in Simulation 50-27.

SIMULATION 50-27
ORIGINAL IMAGE LOSS SETTING(FAX/SCN). SELECT 1-18, AND PRESS START.

[FAX]

| | | | | | |
|--------------------|---|---------------------|---|---------------------|---|
| 1. OC (LEAD_EDGE) | 0 | 2. OC (FRONT/REAR) | 0 | 3. OC (TRAIL_EDGE) | 0 |
| 4. SPF (LEAD_EDGE) | 0 | 5. SPF (FRONT/REAR) | 0 | 6. SPF (TRAIL_EDGE) | 0 |
| 7. CIS (LEAD_EDGE) | 0 | 8. CIS (FRONT/REAR) | 0 | 9. CIS (TRAIL_EDGE) | 0 |

[SCN]

| | | | | | |
|---------------------|---|----------------------|---|----------------------|---|
| 10. OC (LEAD_EDGE) | 0 | 11. OC (FRONT/REAR) | 0 | 12. OC (TRAIL_EDGE) | 0 |
| 13. SPF (LEAD_EDGE) | 0 | 14. SPF (FRONT/REAR) | 0 | 15. SPF (TRAIL_EDGE) | 0 |
| 16. CIS (LEAD_EDGE) | 0 | 17. CIS (FRONT/REAR) | 0 | 18. CIS (TRAIL_EDGE) | 0 |

Press [START] key.

Press [CUSTOM SETTINGS] key.

SIMULATION 50-27
ORIGINAL IMAGE LOSS SETTING(FAX/SCN). INPUT 0-10, AND PRESS START.

1. OC (LEAD_EDGE)

0

| Item | | Set range | Default |
|--------------|------------------|---------------|---------------------------------|
| FAX send | | | |
| 1 | OC (LEAD_EDGE) | OC lead edge | 0 - 10 (Unit 1mm) 3 (3mm) |
| 2 | OC (FRONT/REAR) | OC side | |
| 3 | OC (TRAIL_EDGE) | OC rear edge | |
| 4 | SPF (LEAD_EDGE) | SPF lead edge | |
| 5 | SPF (FRONT/REAR) | SPF side | |
| 6 | SPF (TRAIL_EDGE) | SPF rear edge | |
| 7 | CIS (LEAD_EDGE) | CIS lead edge | |
| 8 | CIS (FRONT/REAR) | CIS side | |
| 9 | CIS (TRAIL_EDGE) | CIS rear edge | |
| Scanner mode | | | |
| 10 | OC (LEAD_EDGE) | OC lead edge | 0 - 10 (Unit 1mm) 0 (0mm) |
| 11 | OC (FRONT/REAR) | OC side | |
| 12 | OC (TRAIL_EDGE) | OC rear edge | |
| 13 | SPF (LEAD_EDGE) | SPF lead edge | |
| 14 | SPF (FRONT/REAR) | SPF side | |
| 15 | SPF (TRAIL_EDGE) | SPF rear edge | |
| 16 | CIS (LEAD_EDGE) | CIS lead edge | |
| 17 | CIS (FRONT/REAR) | CIS side | |
| 18 | CIS (TRAIL_EDGE) | CIS rear edge | |

- 2) Enter the number that corresponds to the fax adjustment item using the numeric keypad.

- 3) Press the Start key

- 4) Enter the adjustment value using the numeric keypad.

- 5) Press the Start key

(The adjustment value should be changed in steps of 1.0mm.)

Scanned images must be visually checked for image loss.

Note: Make adjustments in the same manner as in ADJ 8A and ADJ 8C.

ADJ 9 Adjusting the copied image quality

This adjustment is needed in the following situations:

- The CCD unit has been replaced.
- U2 trouble has occurred.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scanner control PWB has been replaced.
- The EEPROM on the scanner control PWB has been replaced.
- One or more parts of the scanner (reading) section have been replaced.
- One or more consumables (OPC drum, developer, transfer belt) have been replaced.

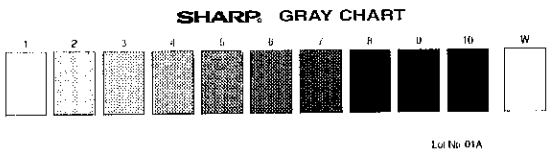
(Copy mode image quality adjustment items)

| Image mode | | Simulation for adjustment | |
|-----------------|-------------|---------------------------|----------------------------|
| | | All-mode adjustment | Individual-mode adjustment |
| Auto mode | Binary mode | 46-2 | |
| Text mode | Binary mode | | 46-9 |
| Text/photo mode | Binary mode | | 46-10 |
| Photo mode | Binary mode | | 46-11 |

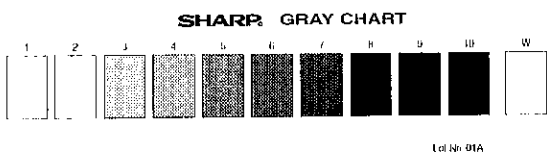
| Adjustment items | Simulation for adjustment |
|---|---------------------------|
| Copied image gamma adjustment (copier mode) | 46-18 |
| Copied image sharpness adjustment | 46-31 |

(Copied image reference density)

Original



Copy



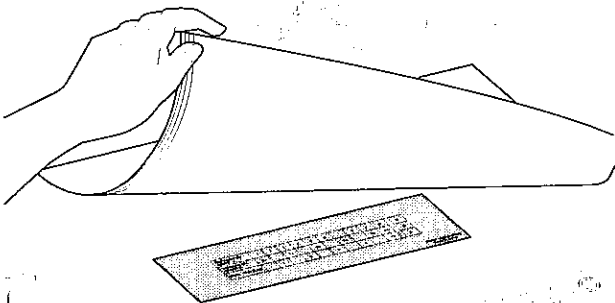
If the copied test chart (UKOG-0162FCZZ) image includes a background copy of patch 3 rather than patch 2, adjust all-copy mode to the image density level specified above.

(Copied image gamma, copied image sharpness)

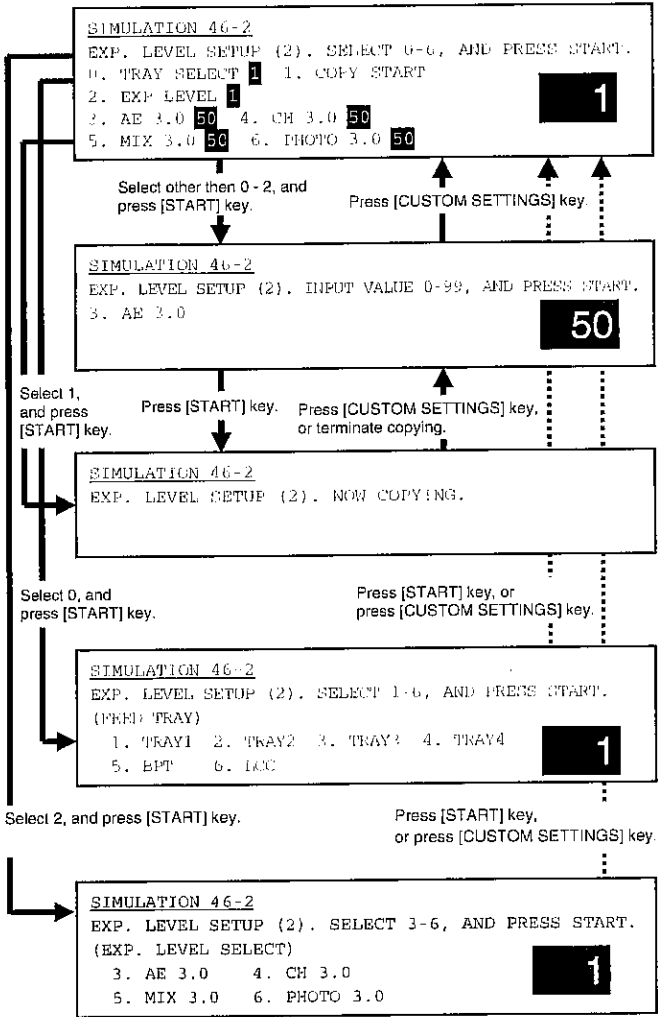
Normally, default settings should be applied to 'copied image gamma' and 'copied image sharpness', but images should be adjusted according to user requests, if any.

ADJ 9A Adjust the binary mode copy density for all modes at once

- 1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper.



- 2) Go through the modes specified in Simulation 46-2.



| Item | | | Set range | Default |
|------|-------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | | |
| 1 | COPY START | Copy START (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |

| Item | | | Set range | Default |
|------|-----------|---------------------|-----------|---------|
| 3 | AE 3.0 | AE mode | 0 - 99 | 50 |
| 4 | CH 3.0 | Text mode 3.0 | | |
| 5 | MIX 3.0 | Text/Photo mode 3.0 | | |
| 6 | PHOTO 3.0 | Photo mode 3.0 | | |

- 3) Using the numeric keypad, select the number that corresponds to the copy mode for which to make adjustments. (Choose from numbers 3 to 6.)
- 4) Press the Start key
- 5) Press the Start key (A copy is created.)
Check the density of the copied image.
If the copied image density is not at an acceptable level, do the following steps.
- 6) Adjust the copy density by entering an appropriate value through the numeric keypad.
A larger value provides higher density.
- 7) Press the P or Start key
This applies the adjustment value.
Pressing the Start key starts copy operation as well as applying the adjustment value.
- 8) Check the copied image density.
Repeat steps 6 to 8 until an acceptable copied image density is obtained.

Note: Adjusting the copied image density through this simulation changes the copied image density settings for all copy modes to the copied image density level applied by carrying out this simulation. Also, the copied image density gradient is automatically adjusted to the specified level.

The copied image density settings for individual copy modes adjusted through Simulations 46-9, -10, and -11 are changed to the copied image density level applied by this simulation.

ADJ 9B

Adjust the copy density in text binary mode

ADJ 9C

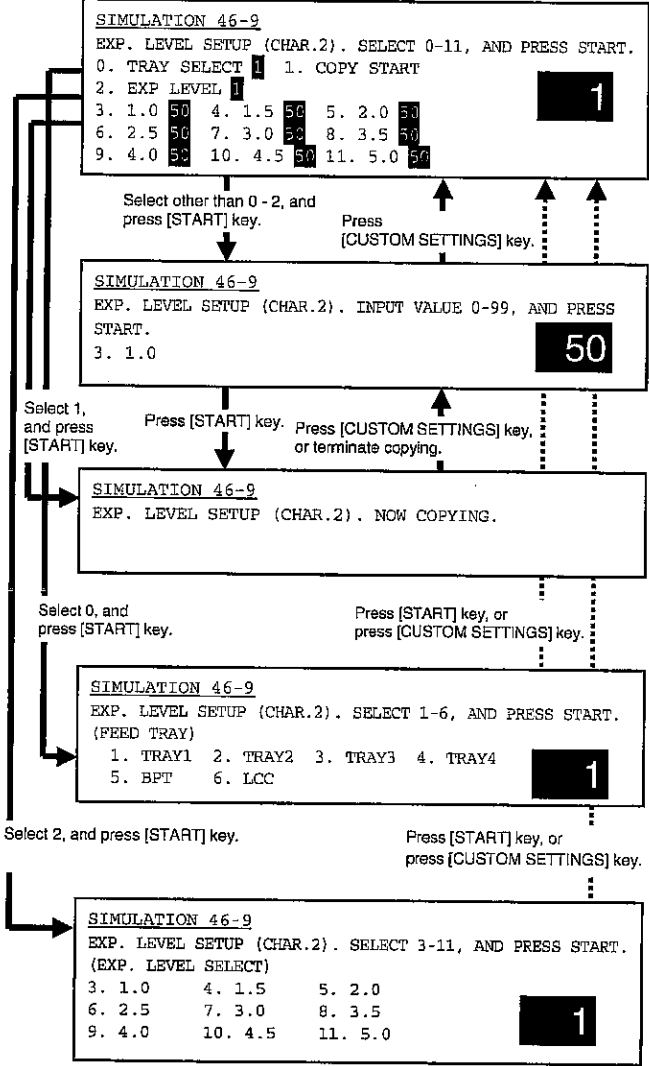
Adjust the copy density in text/photo binary mode

ADJ 9D

Adjust the copy density in photo binary mode

This adjustment is intended to customize the copied image density settings. The copy density setting for each copy density adjustment level (1 to 5) in manual copy mode can be adjusted to a custom density level.

- 1) Set the test chart (UKOG-0162FCZZ) on the original table.
- 2) Go through the simulation modes that correspond to the copy modes for which to adjust the copy density (i.e., the modes specified in Simulations 46-9, -10, or -11).



(SIM 46-9) (Text mode)

| Item | | | Set range | Default |
|------|-------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 99 | 50 |
| 1 | COPY START | Copy START (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |
| 3 | 1.0 | Exposure level 1.0 | | |
| 4 | 1.5 | Exposure level 1.5 | | |
| 5 | 2.0 | Exposure level 2.0 | | |
| 6 | 2.5 | Exposure level 2.5 | | |
| 7 | 3.0 | Exposure level 3.0 | | |
| 8 | 3.5 | Exposure level 3.5 | | |
| 9 | 4.0 | Exposure level 4.0 | | |
| 10 | 4.5 | Exposure level 4.5 | | |
| 11 | 5.0 | Exposure level 5.0 | | |

(SIM 46-10) (Text/photo mode)

| Item | | | Set range | Default |
|------|-------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 99 | 50 |
| 1 | COPY START | Copy START (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |
| 3 | 1.0 | Exposure level 1.0 | | |
| 4 | 1.5 | Exposure level 1.5 | | |
| 5 | 2.0 | Exposure level 2.0 | | |
| 6 | 2.5 | Exposure level 2.5 | | |
| 7 | 3.0 | Exposure level 3.0 | | |
| 8 | 3.5 | Exposure level 3.5 | | |
| 9 | 4.0 | Exposure level 4.0 | | |
| 10 | 4.5 | Exposure level 4.5 | | |
| 11 | 5.0 | Exposure level 5.0 | | |

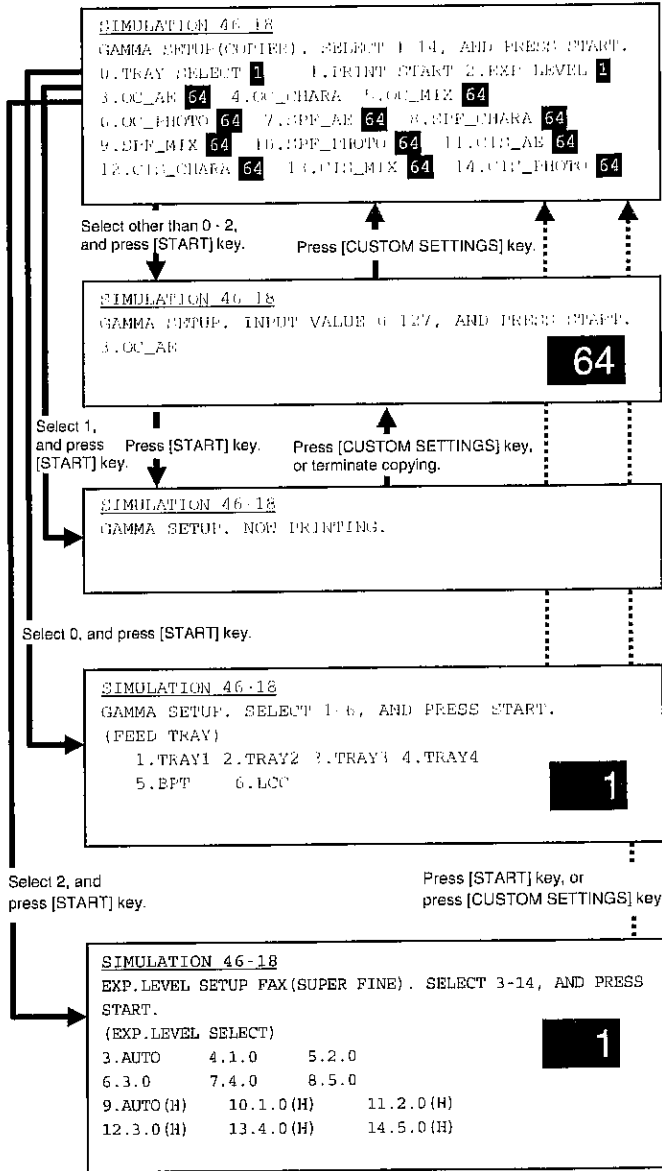
(SIM 46-11) (Photo mode)

| Item | | | Set range | Default |
|------|-------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 99 | 50 |
| 1 | COPY START | Copy START (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |
| 3 | 1.0 | Exposure level 1.0 | | |
| 4 | 1.5 | Exposure level 1.5 | | |
| 5 | 2.0 | Exposure level 2.0 | | |
| 6 | 2.5 | Exposure level 2.5 | | |
| 7 | 3.0 | Exposure level 3.0 | | |
| 8 | 3.5 | Exposure level 3.5 | | |
| 9 | 4.0 | Exposure level 4.0 | | |
| 10 | 4.5 | Exposure level 4.5 | | |
| 11 | 5.0 | Exposure level 5.0 | | |

- 3) Using the numeric keypad, select the number that corresponds to the copy density adjustment level. (Choose from numbers 3 to 11.)
- 4) Press the Start key
- 5) Press the Start key (A copy is created.)
If the copied image density is not at an acceptable level, do the following steps.
- 6) Adjust the copy density by entering an appropriate value through the numeric keypad.
A larger value provides higher density.
- 7) Press the P or Start key.
This applies the adjustment value.
Pressing the Start key starts copy operation as well as applying the adjustment value.
- 8) Check the copied image density.
Repeat steps 5 to 9 until an acceptable copied image density is obtained.

ADJ 9E Adjust the copied image gamma in copy mode

- 1) Set the original on the original table.
- 2) Go through the modes specified in Simulation 46-18.

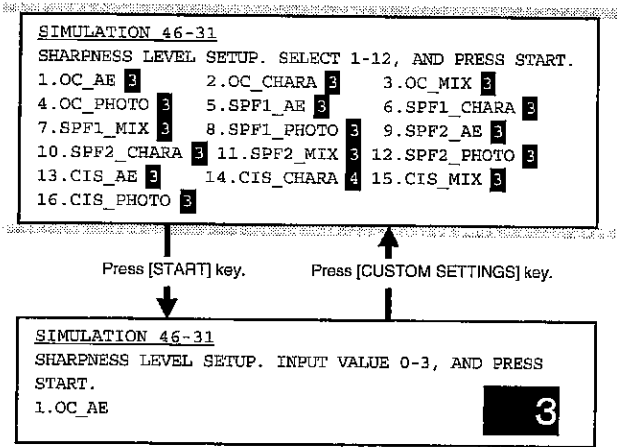


| Item | | | Set range | Default |
|------|-------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 127 | 64 |
| 1 | PRINT START | Print start (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |
| 3 | OC_AE | AE mode (OC) | | |
| 4 | OC_CHARA | Text mode (OC) | | |
| 5 | OC_MIX | Text/Photo mode (OC) | | |
| 6 | OC_PHOTO | Photo mode (OC) | | |
| 7 | SPF_AE | AE mode (SPF) | | |
| 8 | SPF_CHARA | Text mode (SPF) | | |
| 9 | SPF_MIX | Text/Photo mode (SPF) | | |
| 10 | SPF_PHOTO | Photo mode (SPF) | | |
| 11 | CIS_AE | AE mode (CIS) | | |
| 12 | CIS_CHARA | Text mode (CIS) | | |
| 13 | CIS_MIX | Text/Photo mode (CIS) | | |
| 14 | CIS_PHOTO | Photo mode (CIS) | | |

- 3) Using the numeric keypad, select the number that corresponds to the copy mode for which to make adjustments.
(Choose from numbers 3 to 14.)
- 4) Press the Start key
- 5) Enter the gamma adjustment value using the numeric keypad.
A larger value provides larger gamma gradient and higher image contrast.
- 6) Press the P or Start key
Pressing the Start key starts copy (print) operation as well as applying the adjustment value.
- 7) Check the copied image gamma (copy density levels for low and high density areas) (contrast).
- Repeat steps 5 to 7 until an acceptable copied image is obtained.

ADJ 9F Adjust the copied image sharpness

- 1) Set the original on the original table.
- 2) Go through the modes specified in Simulation 46-31.



| Item | | | Set range | Default |
|------|------------|------------------------|-----------|---------|
| 1 | OC_AE | AE mode (OC) | 1 - 5 | 3 |
| 2 | OC_CHARA | Text mode (OC) | | |
| 3 | OC_MIX | Text/Photo mode (OC) | | |
| 4 | OC_PHOTO | Photo mode (OC) | | |
| 5 | SPF1_AE | AE mode (SPF1) | | |
| 6 | SPF1_CHARA | Text mode (SPF1) | | |
| 7 | SPF1_MIX | Text/Photo mode (SPF1) | | |
| 8 | SPF1_PHOTO | Photo mode (SPF1) | | |
| 9 | SPF2_AE | AE mode (SPF2) | | |
| 10 | SPF2_CHARA | Text mode (SPF2) | | |
| 11 | SPF2_MIX | Text/Photo mode (SPF2) | | |
| 12 | SPF2_PHOTO | Photo mode (SPF2) | | |
| 13 | CIS_AE | AE mode (CIS) | 1 - 5 | 4 |
| 14 | CIS_CHARA | Text mode (CIS) | 1 - 5 | 3 |
| 15 | CIS_MIX | Text/Photo mode (CIS) | | |
| 16 | CIS_PHOTO | Photo mode (CIS) | | |

- 3) Using the numeric keypad, select the number that corresponds to the copy mode for which to make adjustments.
(Choose from numbers 1 to 16.)
- 4) Press the Start key
- 5) Adjust the sharpness by entering an appropriate value through the numeric keypad.
A larger value provides higher sharpness.
- 6) Press the P or Start key
Pressing the Start key starts copy (print) operation as well as applying the adjustment value.
- 7) Check the copied image sharpness.
- Repeat steps 5 to 7 until an acceptable copied image is obtained.

ADJ 10 Adjusting the print quality in fax mode

- This adjustment is needed in the following situations:
- The CCD unit has been replaced.
 - U2 trouble has occurred.
 - The MFP control PWB has been replaced.
 - The EEPROM on the MFP control PWB has been replaced.
 - The scanner control PWB has been replaced.
 - The EEPROM on the scanner control PWB has been replaced.
 - One or more parts of the scanner (reading) section have been replaced.

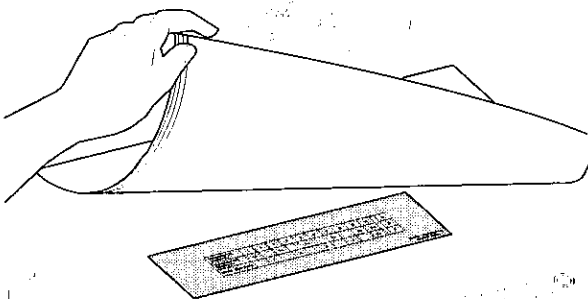
(Fax mode image density adjustment items)

| Image mode | | | Simulation for adjustment | |
|--|-----------|-------------|---------------------------|----------------------------|
| | | | All-mode adjustment | Individual-mode adjustment |
| Fax mode print density adjustment (standard mode) | Auto mode | Binary mode | 46-12 | 46-13 |
| | Manual | Binary mode | | |
| Fax mode print density adjustment (small-character mode) | Auto mode | Binary mode | 46-14 | 46-14 |
| | Manual | Binary mode | | |
| Fax mode print density adjustment (fine mode) | Auto mode | Binary mode | 46-15 | 46-15 |
| | Manual | Binary mode | | |
| Fax mode print density adjustment (super fine mode) | Auto mode | Binary mode | 46-16 | 46-16 |
| | Manual | Binary mode | | |
| Fax mode print density adjustment (600dpi mode) | Auto mode | Binary mode | 46-45 | 46-45 |
| | Manual | Binary mode | | |

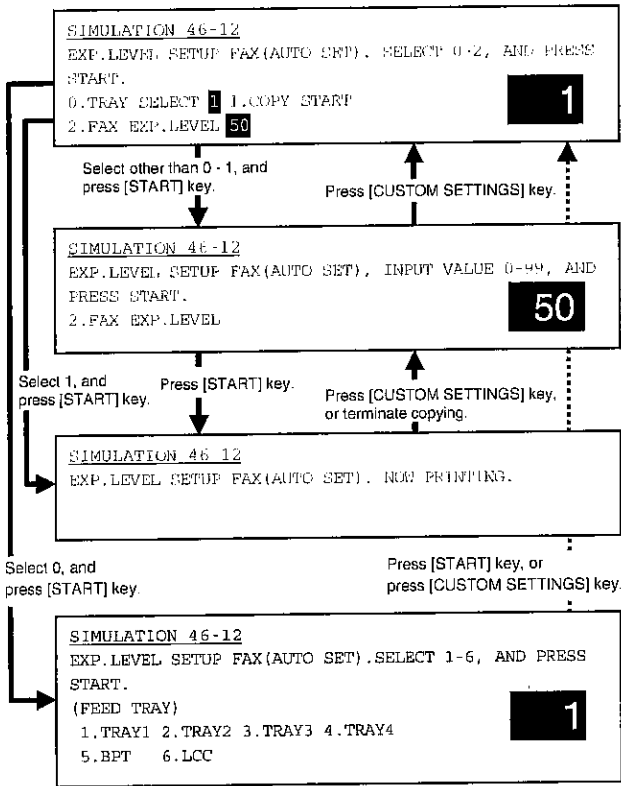
(Fax mode density)
The print density settings should be normally left at defaults but should be adjusted according to user requests, if any.

ADJ 10A Adjust the fax mode print density for all modes at once

- 1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper .



- 2) Go through the modes specified in Simulation 46-12.



| Item | | | Set range | Default |
|------|----------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | | |
| 1 | COPY START | Copy START (Default) | | |
| 2 | FAX EXP. LEVEL | FAX mode print density | 0 - 99 | 50 |

- 3) Select the adjustment item (FAX EXP. LEVEL) using the numeric keypad.
- 4) Press the Start key.
- 5) Press the Start key (A copy is created.)
Check the print density.
If the print density is not at an acceptable level, do the following steps.
- 6) Enter the print adjustment value using the numeric keypad.
- 7) Press the P or Start key
This applies the adjustment value.
Pressing the Start key starts print operation as well as applying the adjustment value.

- 8) Check the print density.

Repeat steps 6 to 8 until an acceptable print density is obtained.

Note: Adjusting the Fax print density through this simulation changes the print density settings for all Fax modes to the density level applied by carrying out this simulation.

The Fax mode print density settings for individual Fax modes adjusted through Simulations 46-13, -14, -15, -16 and -45 are changed to the print density level applied by this simulation.

ADJ 10B Adjust the fax mode print density in standard mode

ADJ 10C Adjust the fax mode print density in small-character mode

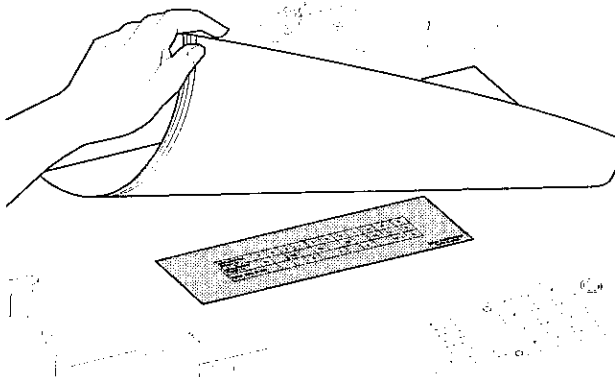
ADJ 10D Adjust the fax mode print density in fine mode

ADJ 10E Adjust the fax mode print density in super fine mode

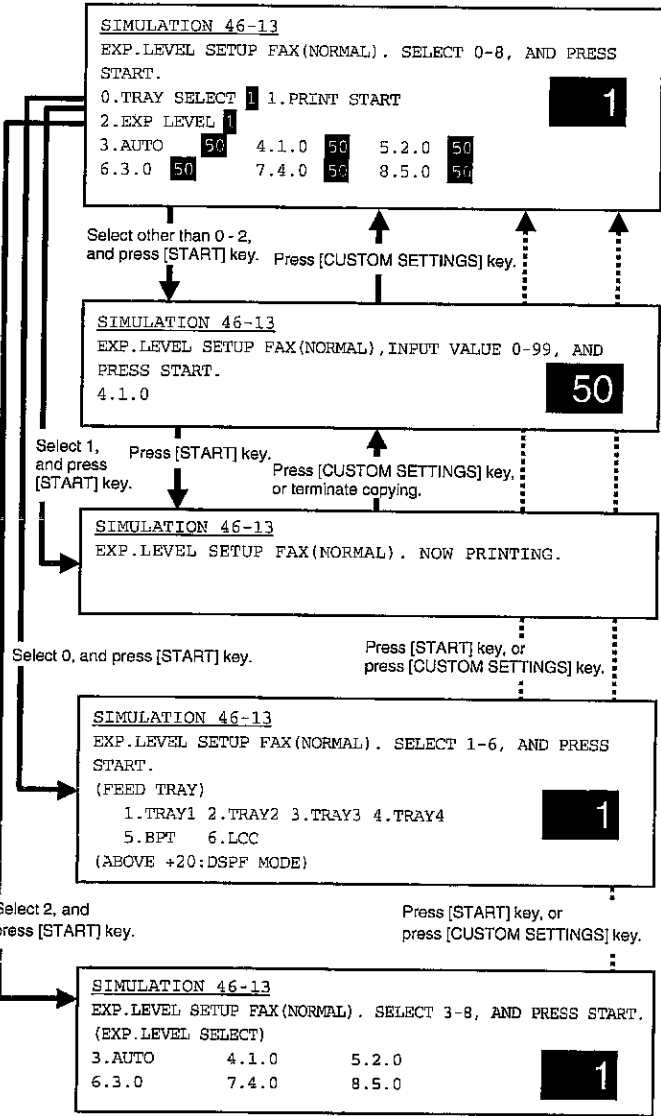
ADJ 10F Adjust the fax mode print density in 600dpi mode

This adjustment is intended to the print mode for each Fax mode individually. In manual mode, the print density setting for each print density adjustment level (1 to 5) can be adjusted to a custom density level.

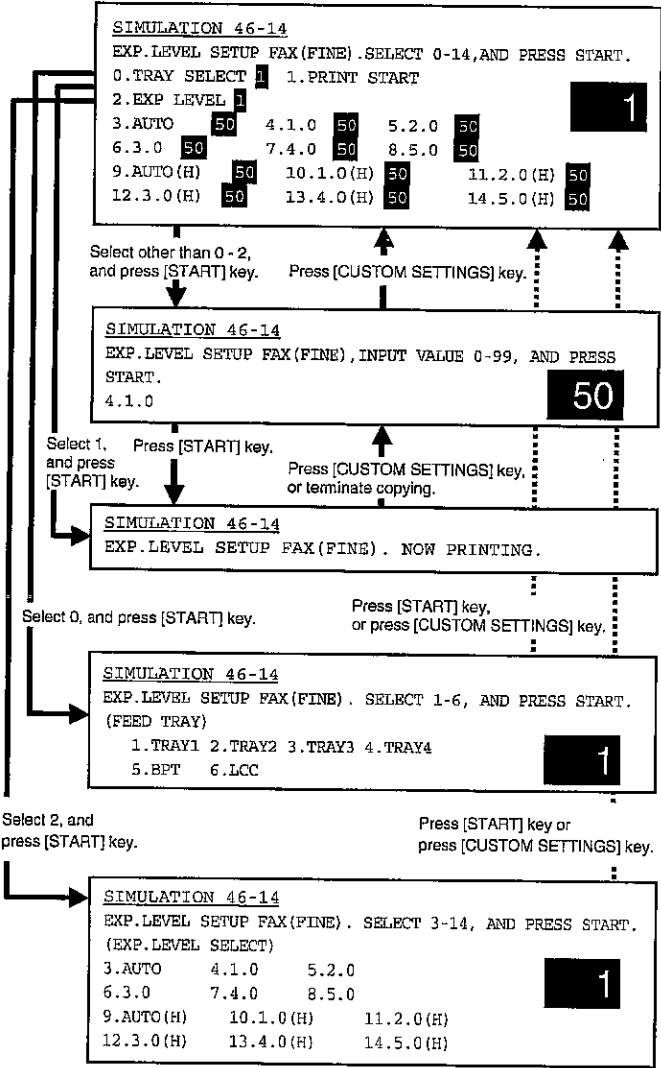
- 1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper .



2) Go through the simulation modes that correspond to the Fax modes for which to adjust the print density (i.e., the modes specified in Simulations 46-13, -14, -15, -16, or -45).



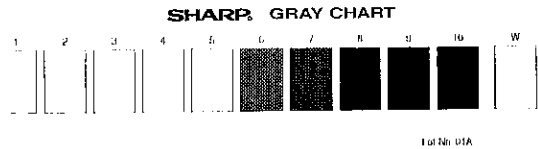
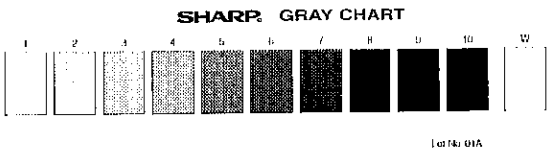
| Item | | | Set range | Default |
|------|-------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 99 | 50 |
| 1 | PRINT START | Print start (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |
| 3 | AUTO | Auto | | |
| 4 | 1.0 | Exposure level 1 | | |
| 5 | 2.0 | Exposure level 2 | | |
| 6 | 3.0 | Exposure level 3 | | |
| 7 | 4.0 | Exposure level 4 | | |
| 8 | 5.0 | Exposure level 5 | | |



| Item | | | Set range | Default |
|------|-------------|------------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 99 | 50 |
| 1 | PRINT START | Print start (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |
| 3 | AUTO | Auto | | |
| 4 | 1.0 | Exposure level 1 | | |
| 5 | 2.0 | Exposure level 2 | | |
| 6 | 3.0 | Exposure level 3 | | |
| 7 | 4.0 | Exposure level 4 | | |
| 8 | 5.0 | Exposure level 5 | | |
| 9 | AUTO (H) | Auto (Half-tone) | | |
| 10 | 1.0 (H) | Exposure level 1 (Half-tone) | | |
| 11 | 2.0 (H) | Exposure level 2 (Half-tone) | | |
| 12 | 3.0 (H) | Exposure level 3 (Half-tone) | | |
| 13 | 4.0 (H) | Exposure level 4 (Half-tone) | | |
| 14 | 5.0 (H) | Exposure level 5 (Half-tone) | | |

- 3) Using the numeric keypad, select the number that corresponds to the adjustment item. Choose from numbers 3 to 8 (14).
- Auto mode
 - Manual mode (print density adjustment level)
- For manual mode, select the number that corresponds to the print density level (1 to 5). (Choose from numbers (4 to 8) (10-14)).
- 4) Press the Start key
- 5) Press the Start key. (A copy is created.)

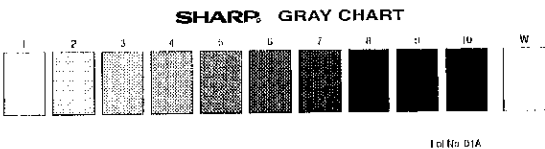
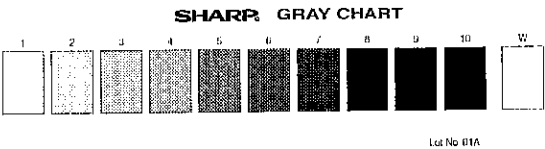
▲ (Binary mode)
(Copy image reference density)
Original



If the copied test chart (UKOG-0162FCZZ) image includes a back-ground copy of patch 6 rather than patch 5, adjust all-copy mode to the image density level specified above.

(Half tone mode)
(Copy image reference density)

Original



If the copied test chart (UKOG-0162FCZZ) image includes a back-ground copy of patch 2 rather than patch 1, adjust all-copy mode to the image density level specified above.

If the print density is not at an acceptable level, do the following steps.

6) Adjust the print density by entering an appropriate value through the numeric keypad.

A larger value provides higher density.

7) Press the P or Start key

This applies the adjustment value.

Pressing the Start key starts print operation as well as applying the adjustment value.

8) Check the printed image density.

Repeat steps 6 to 8 until an acceptable image density is obtained.

ADJ 11 Adjusting the image quality in scan mode

This adjustment is needed in the following situations:

- The CCD unit has been replaced.
- U2 trouble has occurred.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scanner control PWB has been replaced.
- The EEPROM on the scanner control PWB has been replaced.
- One or more parts of the scanner (reading) section have been replaced.

(Scan mode image quality adjustment items)

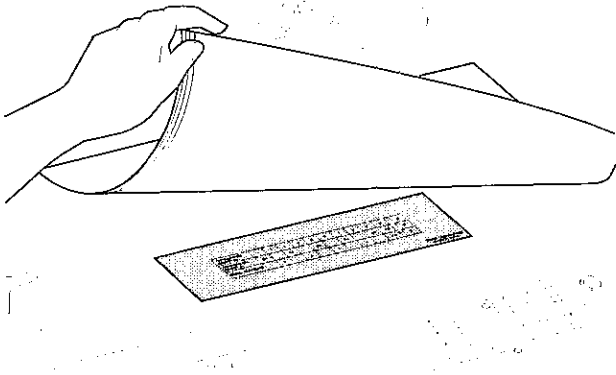
| Image mode | | | Simulation for adjustment | |
|--|--------|----------------|---------------------------|----------------------------|
| | | | All-mode adjustment | Individual-mode adjustment |
| Scan mode image density adjustment/individual setup (standard mode) | Auto | Binary mode | 46-21 | 46-22 |
| | Manual | Binary mode | | |
| Scan mode image density adjustment/individual setup (small-character mode) | Auto | Binary mode | | 46-23 |
| | | Half tone mode | | |
| | Manual | Binary mode | | 46-24 |
| | | Half tone mode | | |
| Scan mode image density adjustment/individual setup (fine mode) | Auto | Binary mode | 46-25 | 46-25 |
| | | Half tone mode | | |
| Scan mode image density adjustment/individual setup (super fine mode) | Auto | Binary mode | | |
| | Manual | Binary mode | | |
| | | Half tone mode | | |
| | | Half tone mode | | |

(Scan mode image quality)

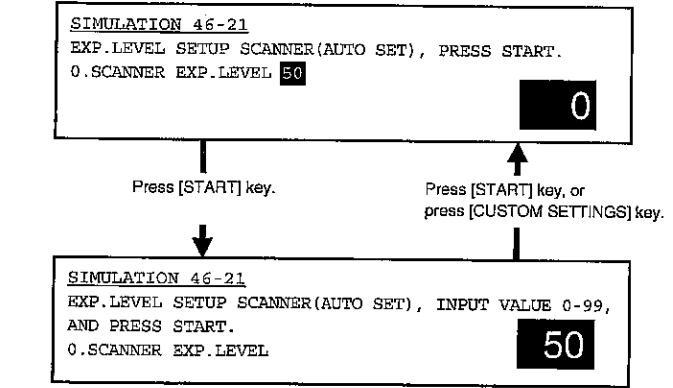
The image density settings should be normally left at defaults but should be adjusted according to user requests, if any.

ADJ 11A Adjust the scan mode image density for all modes at once

- 1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper.



1) Go through the modes specified in Simulation 46-21.



| Item | | | Set range | Default |
|------|--------------------|---------------------|-----------|---------|
| 0 | SCANNER EXP. LEVEL | Image density level | 0 - 99 | 50 |

- 2) Select the adjustment item SCANNER EXP. LEVEL using the numeric keypad.
- 3) Press the Start key
- 4) Enter the image density adjustment value.
- 5) Press the P or Start key

Note: Adjusting the scanned image density through this simulation changes the image density settings for all scan modes to the image density level applied by carrying out this simulation.

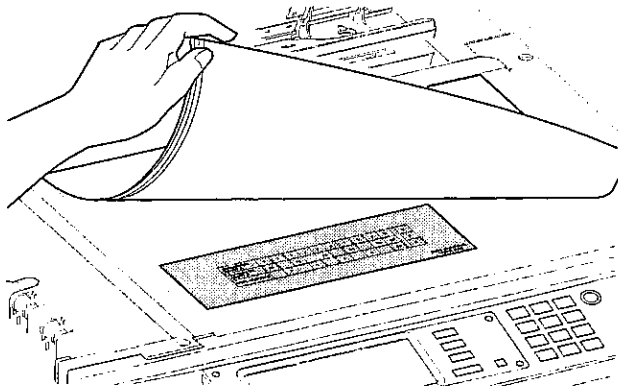
The scan-mode image density settings for individual scan modes adjusted through Simulations 46-22, -23, -24, -25, and -45 are changed to the image density level applied by this simulation.

Scanned images must be visually checked to ensure the post-adjustment image density.

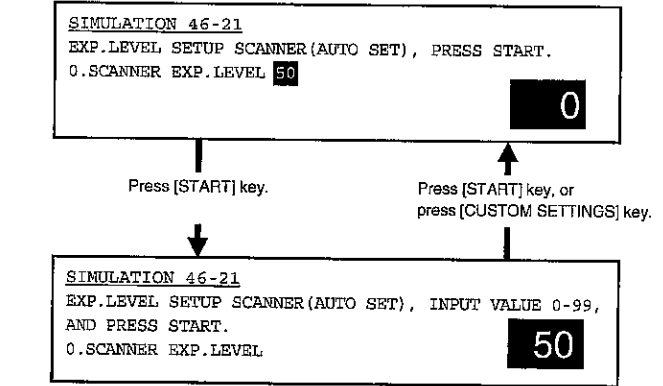
- ADJ 11B** Scan mode image density adjustment/ individual setup (standard mode)
- ADJ 11C** Scan mode image density adjustment/ individual setup (small-character mode)
- ADJ 11D** Scan mode image density adjustment/ individual setup (fine mode)
- ADJ 11E** Scan mode image density adjustment/ individual setup (super fine mode)

This adjustment is intended to the image mode for each scan mode individually. In manual mode, the image density setting for each scanned image density adjustment level (1 to 5) can be adjusted to a custom density level.

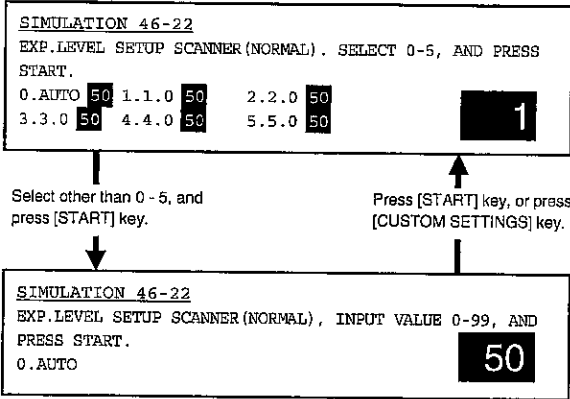
- 1) Set the test chart (UKOG-0162FCZZ) on the original table so that it aligns with the front frame. Then put four or five pieces of A3 (11" x 17") paper.



▲ 2) Go through the simulation modes that correspond to the scan modes for which to adjust the scanned image density (i.e., the modes specified in Simulations 46-22, -23, -24 or -25).



| Item | | | Set range | Default |
|------|--------------------|---------------------|-----------|---------|
| 0 | SCANNER EXP. LEVEL | Image density level | 0 - 99 | 50 |



| Item | | | Set range | Default |
|------|------|------------------|-----------|---------|
| 0 | AUTO | Auto | 0 - 99 | 50 |
| 1 | 1.0 | Exposure level 1 | | |
| 2 | 2.0 | Exposure level 2 | | |
| 3 | 3.0 | Exposure level 3 | | |
| 4 | 4.0 | Exposure level 4 | | |
| 5 | 5.0 | Exposure level 5 | | |

- 3) Enter the number that corresponds to the following adjustment item using the numeric keypad. (Choose from numbers 0 to 5.)
- Auto mode
 - Manual mode (print density adjustment level)
- For manual mode, select the number that corresponds to the image density adjustment level (1 to 5). (Choose from numbers 1 to 5.)
- 6) Press the Start key
- 7) Enter the image density adjustment value.
- 8) Press the P or Start key
- Scanned images must be visually checked to ensure the post-adjustment image density.

ADJ 11F Adjust the image gamma in scanner mode

1) Go through the modes specified in Simulation 46-27.

SIMULATION 46-27

GAMMA SETUP(SCANNER), SELECT 1-9, AND PRESS START.

1.OC_Fine.HT 64

2.OC_SFine.HT 64

3.OC_UFine.HT 64

4.SPF_Fine.HT 64

5.SPF_SFine.HT 64

6.SPF_UFine.HT 64

7.CIS_Fine.HT 64

8.CIS_SFine.HT 64

9.CIS_UFine.HT 64

| Item | | |
|------|--------------|------------------------------|
| 1 | OC_Fine.HT | Fine text (Half-tone) (OC) |
| 2 | OC_SFine.HT | Super fine (Half-tone) (OC) |
| 3 | OC_UFine.HT | Ultra fine (Half-tone) (OC) |
| 4 | SPF_Fine.HT | Fine text (Half-tone) (SPF) |
| 5 | SPF_SFine.HT | Super fine (Half-tone) (SPF) |
| 6 | SPF_UFine.HT | Ultra fine (Half-tone) (SPF) |
| 7 | CIS_Fine.HT | Fine text (Half-tone) (CIS) |
| 8 | CIS_SFine.HT | Super fine (Half-tone) (CIS) |
| 9 | CIS_UFine.HT | Ultra fine (Half-tone) (CIS) |

2) Using the numeric keypad, select the number that corresponds to the scan mode for which to make adjustments.

4) Press the Start key

5) Adjust the gamma by entering an appropriate value through the numeric keypad.
A larger value provides larger gamma gradient and higher image contrast.

6) Press the Start key

This applies the adjustment value.

Scanned images must be visually checked to ensure the post-adjustment image gamma.

ADJ 12 Common image quality adjustments for all of copy, scan, and fax modes

(Common image quality adjustment items for all of copy, scan, and fax modes)

| Adjustment items | Simulation for adjustment |
|--|---------------------------|
| Original table mode/SPF mode image density correction | 46-20 |
| (Auto mode operation spec setting for copy, scan, and fax) | 46-19 |

ADJ 12A Correct the image density in original table mode/SPF mode (Copy mode)

Used to adjust the copy density correction in the SPF copy mode for the document table copy mode. The adjustment is made so that the copy density becomes the same as that of the document table copy mode.

This adjustment is needed in the following situations:

- The CCD unit has been replaced.
- U2 trouble has occurred.
- The MFP control PWB has been replaced.
- The EEPROM on the MFP control PWB has been replaced.
- The scanner control PWB has been replaced.
- The EEPROM on the scanner control PWB has been replaced.
- One or more parts of the scanner (reading) section have been replaced.
- The CIS unit has been removed.

- The CIS unit has been replaced.
- The SPF unit has been removed.
- The SPF unit has been replaced.

1) Go through the modes specified in Simulation 46-20.

SIMULATION 46-20

OC/SPF EXP. ADJUSTMENT. SELECT 1-4, AND PRESS START.

0. TRAY SELECT 1

1. PRINT START

2. EXP LEVEL 1

3. SPF (FRONT) 128

4. SPF (REAR) 128

5. DSPF 128

Select other than 0 - 2, and press [START] key.

Select 1, and press [START] key.

Select 0, and press [START] key.

Select 2, and press [START] key.

SIMULATION 46-20

OC/SPF EXP. ADJUSTMENT. INPUT VALUE 0-255, AND PRESS START.

1. SPF (FRONT) 128

SIMULATION 46-20

OC/SPF EXP. ADJUSTMENT. NOW PRINTING.

SIMULATION 46-20

OC/SPF EXP. ADJUSTMENT. SELECT 1-6, AND PRESS START.

(FEED TRAY)

2. TRAY1 2. TRAY2 3. TRAY3 4. TRAY4

5. BPT 6. LCC

SIMULATION 46-20

OC/SPF EXP. ADJUSTMENT. SELECT 3-8, AND PRESS START.

(EXP. LEVEL SELECT)

3. 1.0 4. 1.5 5. 2.0

6. 2.5 7. 3.0 8. 3.5

9. 4.0 10. 4.5 11. 5.0

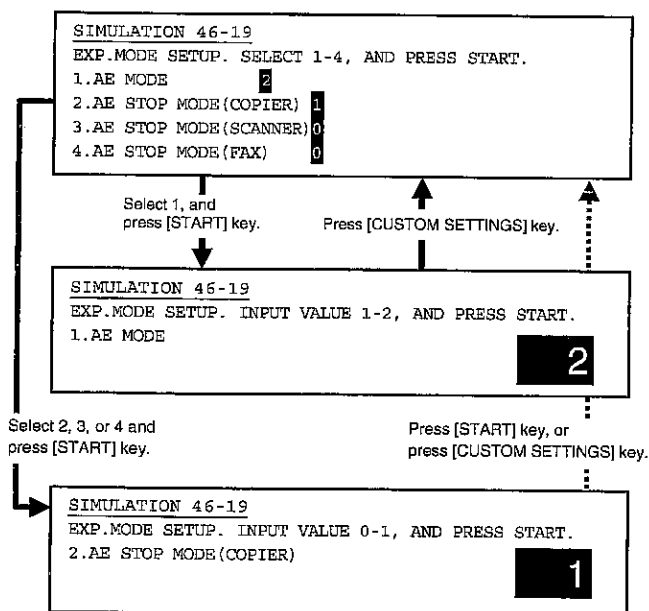
| Item | Content | Set range | Default |
|------|--|-----------|---------|
| 0 | TRAY SELECT Paper feed tray selection 1: TRAY1 2: TRAY2 3: TRAY3 4: TRAY4 5: Manual feed 6: Side LCC | — | — |
| 1 | PRINT START Print start (Default) | — | — |
| 2 | EXP LEVEL Exposure level selection 3: Exposure level 1.0 4: Exposure level 1.5 5: Exposure level 2.0 6: Exposure level 2.5 7: Exposure level 3.0 8: Exposure level 3.5 9: Exposure level 4.0 10: Exposure level 4.5 11: Exposure level 5.0 | — | — |
| 3 | SPF (FRONT) SPF (front) (front frame side) | 0 - 255 | 128 |
| 4 | SPF (REAR) SPF (front) (rear frame side) | | |
| 5 | DSPF DSPF (Back surface) | | |

- 2) Using the numeric keypad, enter the number that corresponds to the mode for which to make adjustments.
SPF front frame side (front face copy), SPF rear frame side (front face copy), SPF (back side copy) (Choose from numbers 3 to 5.)
 - 3) Press the Start key
 - 4) Enter the density correction value using the numeric keypad.
 - 5) Press the P or Start key
 - 6) Make two copies (one in original table mode and the other in SPF mode) and compare the copies in terms of density.
- Repeat steps 4 to 6 until both copies provide the same density.

ADJ 12B Set up the auto mode operation for copy, scan, and fax

This adjustment is needed in the following situations:

- U2 trouble has occurred.
 - The MFP control PWB has been replaced.
 - The EEPROM on the MFP control PWB has been replaced.
 - The scanner control PWB has been replaced.
 - The EEPROM on the scanner control PWB has been replaced.
- 1) Go through the modes specified in Simulation 46-19.



| Mode | Set value | Item | Default |
|---------------|-----------|--|-------------------------------|
| AE mode | 1 | image quality priority mode (Normal mode) * Gamma is sharp to provide high contrast images. | 1 (Japan) 2 (EX Japan) |
| | 2 | Toner consumption priority mode * Gamma is mild to provide low contrast images. | |
| AE fixed mode | 0 | AE fixed OFF | 1 (COPIER) 0 (SCANNER/FAX) |
| | 1 | AE fixed ON | |

- 1) Select "1 AE MODE" using the numeric keypad.
- 2) Press the Start key
- 3) Using the numeric keypad, select the number that corresponds to the operation spec.
- 4) Press the Start key.
Pressing the Start key applies the setting.

(Auto copy mode operation setting)

- 1) Using the numeric keypad, select the number that corresponds to the mode for which to make adjustments. (Choose from numbers 2 to 4.)
- 2) Press the Start key
- 3) Using the numeric keypad, select the number that corresponds to the operation mode.
- 4) Press the Start key.

AE fix OFF: Density (exposure) is automatically controlled on a real time basis. (The density level is dynamically changed according to the original's pattern.)

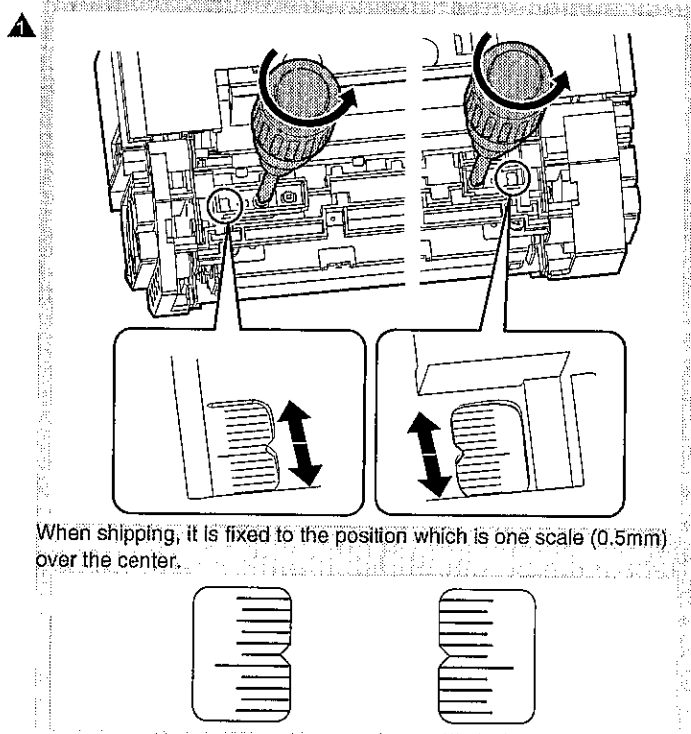
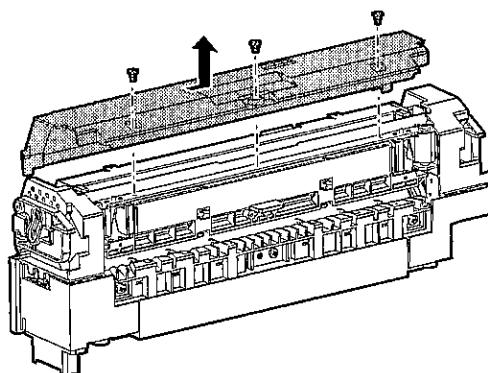
AE fix ON: The density of the leading edge of the original is detected and used to determine the overall density (exposure) level. (The overall density level is fixed.)

ADJ 13 Adjusting the fusing paper guide position

This adjustment is needed in the following situations:

- Paper is jammed in or around the fusing section.
- ▲ Imperfect images, deformed images, or wrinkles are produced in the paper lead edge section or the rear edge section.

Adjust the fusing paper guide position by loosening the fusing paper guide fixing screws and the sliding the fusing paper guide in the arrow direction.



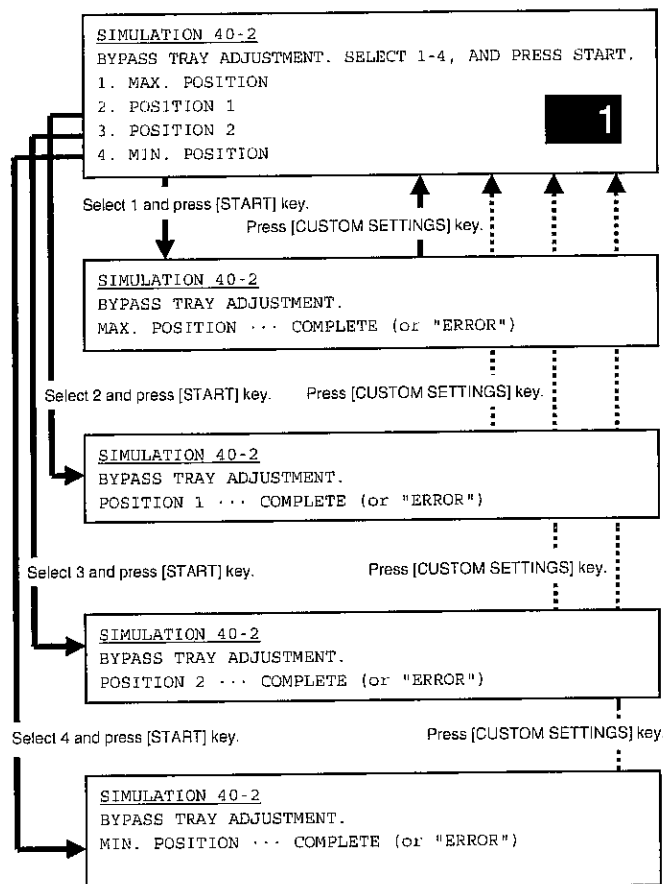
ADJ 14 Adjusting the paper size detection

ADJ 14A Adjust the paper width sensor for the manual paper feed tray

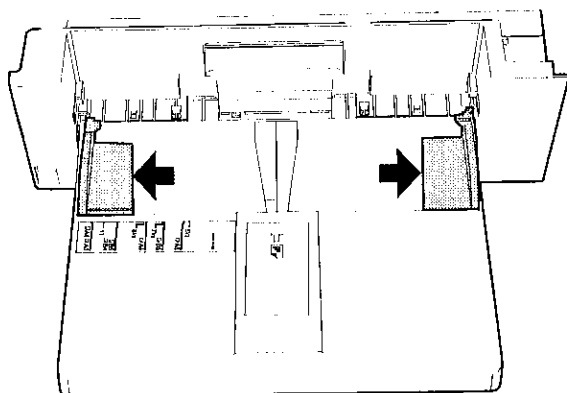
This adjustment is needed in the following situations:

- The manual paper feed tray section has been disassembled.
- The manual paper feed tray unit has been replaced.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM on the PCU PWB has been replaced.

1) Go through the modes specified in Simulation 40-2.

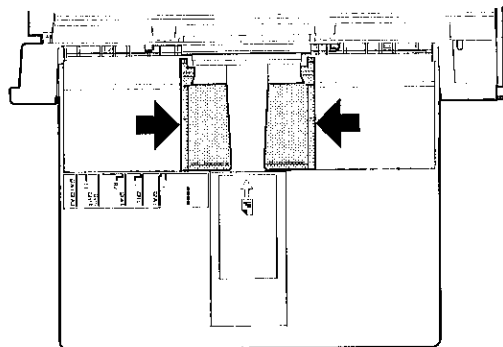


- 2) Open the manual paper feed guide to the maximum width position.
3) Select MAX. POSITION using the numeric keypad.



- 4) Press the Start key.
The maximum width detection level is recognized.
5) Press the CUSTOM SETTINGS key.

- 6) Set the manual paper feed guide to the width for the A4R size.
7) Select POSITION 1 using the numeric keypad.
8) Press the Start key
The A4R width detection level is recognized.
9) Press the CUSTOM SETTINGS key.
10) Set the manual paper feed guide to the width for the A5R size.
11) Select POSITION 2 using the numeric keypad.
12) Press the Start key.
The A5R width detection level is recognized.
13) Press the CUSTOM SETTINGS key.
14) Open the manual paper feed guide to the minimum width position.



- 15) Select MIN. POSITION using the numeric keypad.
16) Press the Start key

The minimum width detection level is recognized.

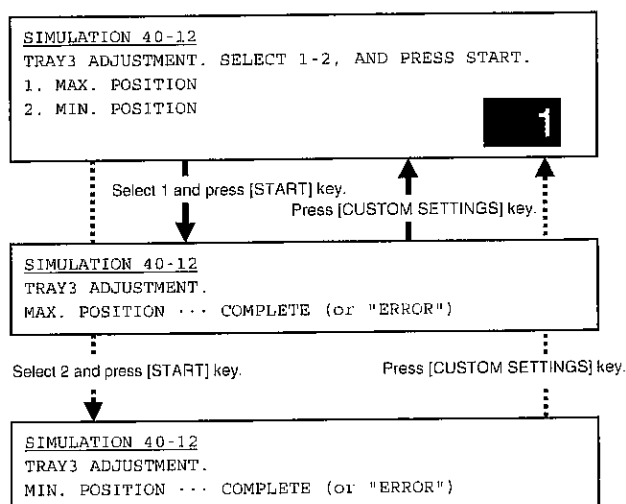
Note: When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

ADJ 14B Adjust the paper width sensor for paper feed tray 3

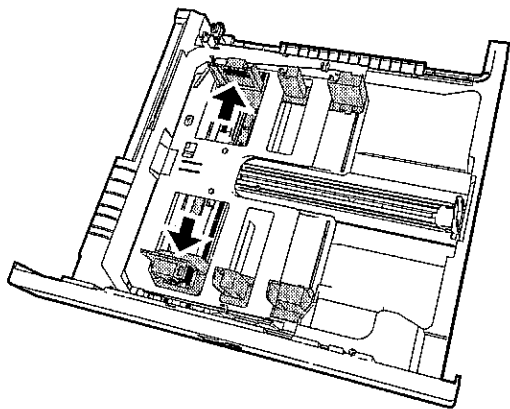
This adjustment is needed in the following situations:

- The paper feed tray section has been disassembled.
- The paper feed tray unit has been replaced.
- U2 trouble has occurred.
- The PCU PWB has been replaced.
- The EEPROM on the PCU PWB has been replaced.

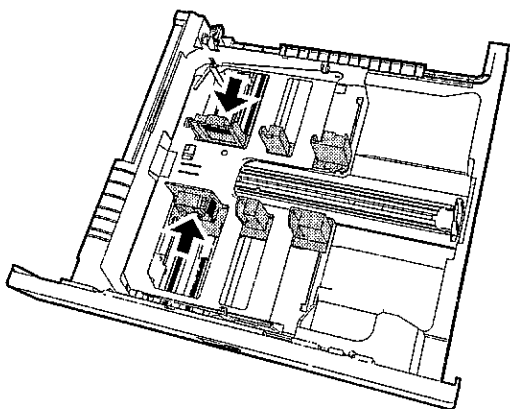
1) Go through the modes specified in Simulation 40-12.



2) Open the paper feed guide to the maximum width position.



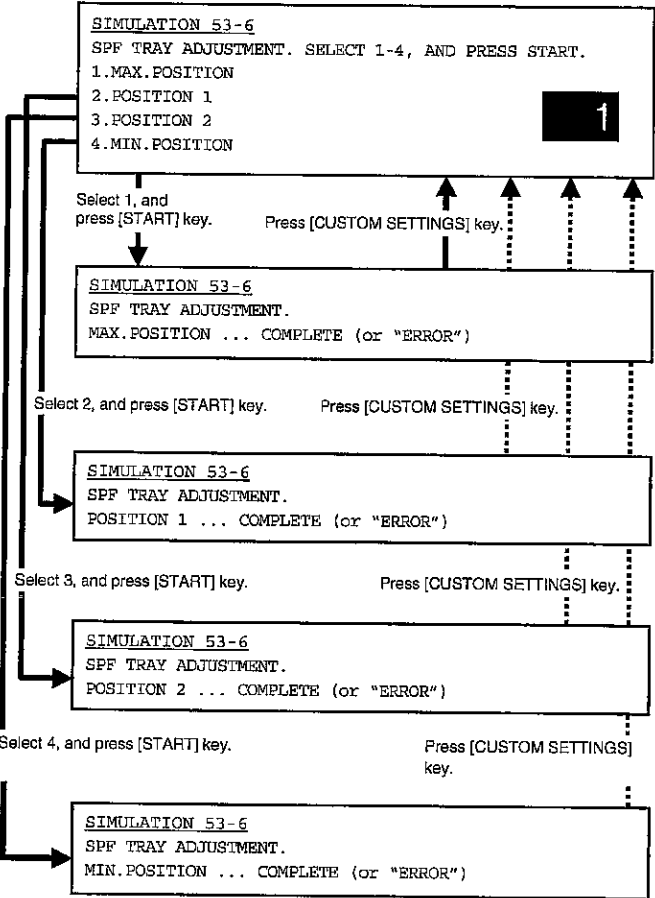
- 3) Select MAX. POSITION using the numeric keypad.
- 4) Press the Start key.
The maximum width detection level is recognized.
- 5) Press the CUSTOM SETTINGS key.
- 6) Open the paper feed guide to the minimum width position.



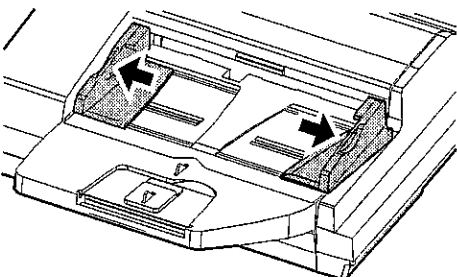
- 7) Select MIN. POSITION using the numeric keypad.
 - 8) Press the Start key.
The minimum width detection level is recognized.
- Note: When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

ADJ 14C Adjust the paper width sensor for the SPF paper feed tray

- This adjustment is needed in the following situations:
- The paper feed tray section has been disassembled.
 - The paper feed tray unit has been replaced.
 - U2 trouble has occurred.
 - The scanner PWB has been replaced.
 - The EEPROM on the scanner PWB has been replaced.
- 1) Go through the modes specified in Simulation 53-6.

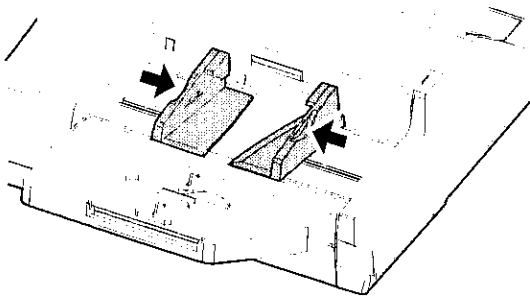


2) Open the SPF paper feed guide to the maximum width position.



- 3) Select MAX. POSITION using the numeric keypad.
- 4) Press the Start key.
The maximum width detection level is recognized.
- 5) Press the CUSTOM SETTINGS key.
- 6) Open the SPF paper feed guide to the width for the A4R size.
- 7) Select POSITION 1 using the numeric keypad.
- 8) Press the Start key.
The A4R width detection level is recognized.
- 9) Press the CUSTOM SETTINGS key.
- 10) Open the SPF paper feed guide to the width for the A5R size.
- 11) Select POSITION 2 using the numeric keypad.
- 12) Press the Start key.
The A5R width detection level is recognized.
- 13) Press the CUSTOM SETTINGS key.

14) Open the SPF paper feed guide to the minimum width position.



15) Select MIN. POSITION using the numeric keypad.

16) Press the Start key

The minimum width detection level is recognized.

Note: When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

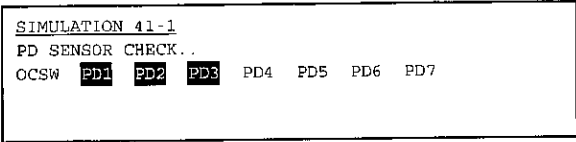
ADJ 15 Adjusting the original size detection (in original table mode)

This adjustment is needed in the following situations:

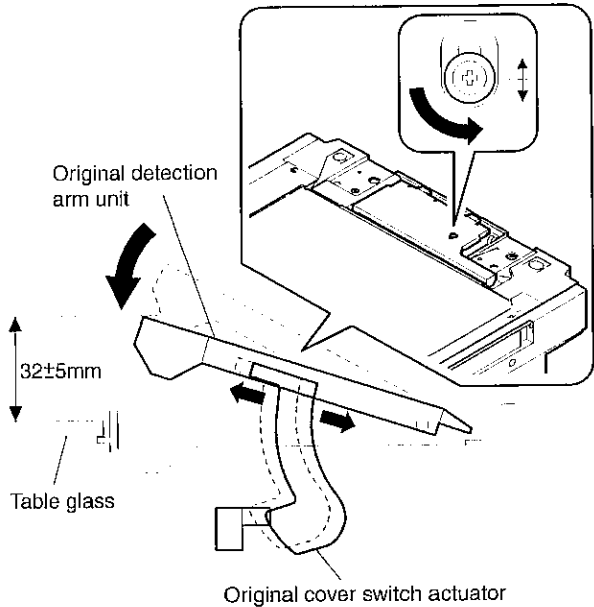
- The original size sensor section has been disassembled.
- The original size sensor section has been replaced.
- U2 trouble has occurred.
- The scanner control PWB has been replaced.
- The EEPROM on the scanner control PWB has been replaced.

ADJ 15A Adjust the detection point of the original size sensor (in original table mode)

1) Go through the modes specified in Simulation 41-1.

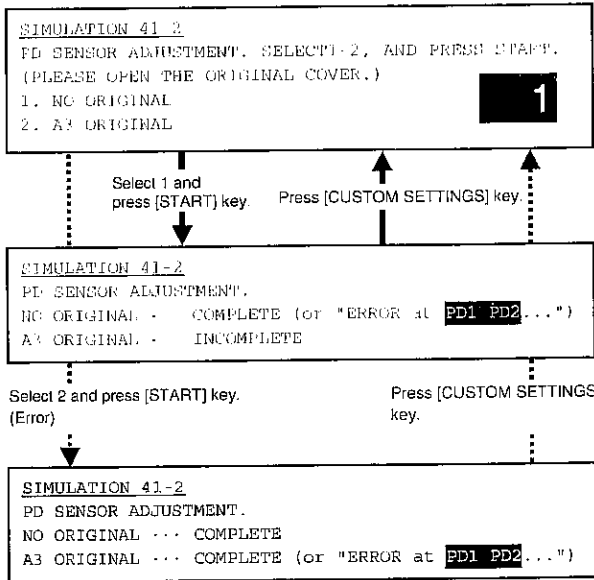


2) Gradually turn over the original detection arm unit in the arrow direction, and loosen the original cover switch actuator adjusting screw so that the OCSW indicator changes from inverse video when the arm unit top reaches a height of 32±0.5mm from the table glass. Then move the actuator to adjust its position. (If the original cover switch turns on in improper timing, the original detection mechanism may fail to operate correctly.)



ADJ 15B Adjust the sensitivity of the original size sensor

1) Go through the modes specified in Simulation 41-2.



- 2) Open the original cover. With nothing placed on the original table, select NO ORIGINAL using the numeric keypad.
- 3) Press the Start key
This sets the sensor level with no original detected.
- 4) Set A3 (11" x 17") paper on the original table, and select A3 ORIGINAL using the numeric keypad.
- 5) Press the Start key
This sets the sensor level with an original detected.

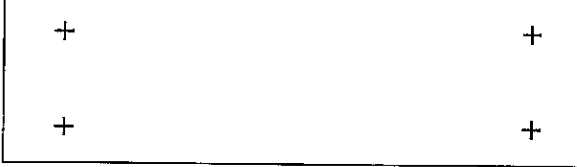
When each of the above operations has been completed, the "COMPLETE" message appears; when any of the operations has failed, the "ERROR" message appears.

ADJ 16 Adjusting the touch panel coordinates

This adjustment is needed in the following situations:

- The operation panel has been replaced.
 - U2 trouble has occurred.
 - The MFP control PWB has been replaced.
 - The EEPROM on the MFP control PWB has been replaced.
- 1) Go through the modes specified in Simulation 65-1.

SIMULATION 65-1



- 2) Press the four cross mark points.

Pressing the cross mark points correctly results in gray display. When the touch panel adjustment is complete with the four points pressed, the sub-number entry screen for simulation reappears.

If any error is detected, the touch panel returns to adjustment mode.

Note: Never use something with a sharp tip (such as a needle or pin) to press the touch panel.

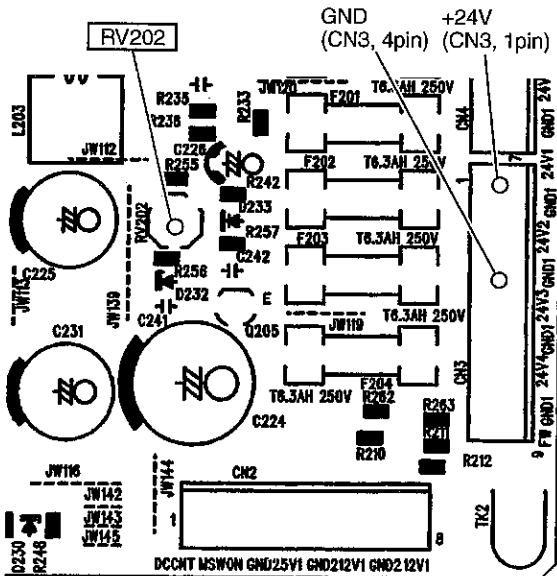
ADJ 17 Adjusting the supply voltage

This adjustment is needed in the following situations:

- One or more parts of the DC main power supply unit have been replaced.
- One or more parts of the DC sub power supply unit have been replaced.

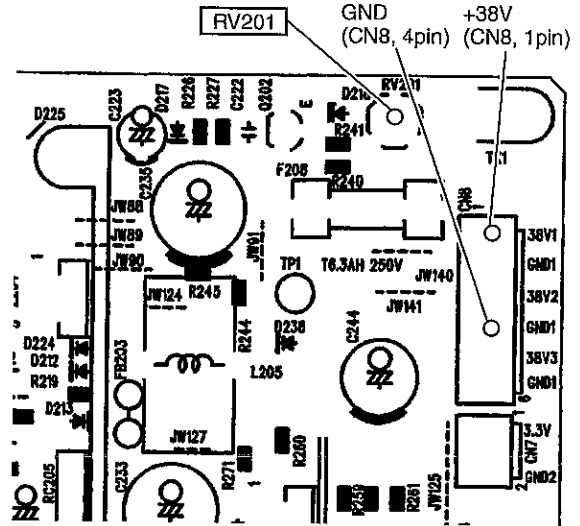
(24 V supply voltage adjustment)

- 1) Apply a digital multi-meter to the DC main PWB 24 V line (CN3, 1 pin) and GND (CN3, 4 pin).
- 2) Turn RV202 on the DC main power supply PWB so that the voltage is 24 V.



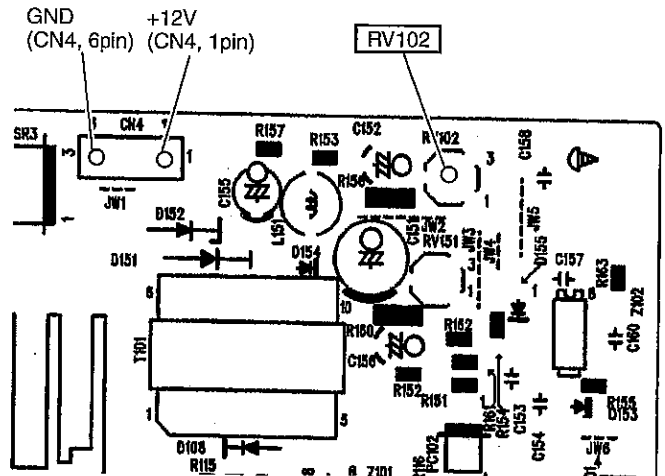
(38 V supply voltage adjustment)

- 3) Apply a digital multi-meter to the DC main PWB 38 V line (CN8, 1 pin) and GND (CN8, 4 pin).
- 4) Turn RV201 on the DC main power supply PWB so that the voltage is 38 V.



(12 V supply voltage adjustment)

- 5) Apply a digital multi-meter to the DC sub PWB 12 V line (CN4, 1 pin) and GND (CN4, 6 pin).
- 6) Turn RV102 on the DC sub power supply PWB so that the voltage is 12 V.

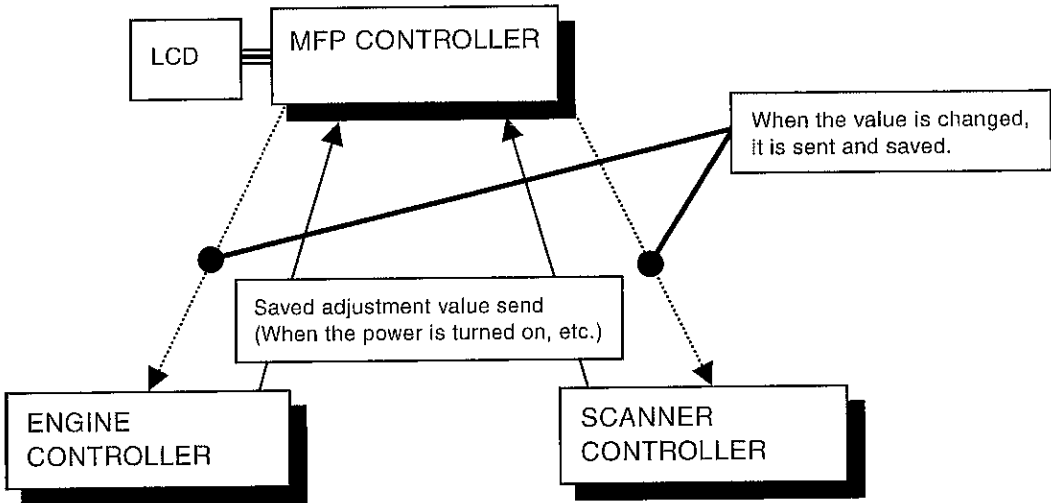


[8] SIMULATION

▲ 1. Adjustment value/Simulation and storage data

A. Simulation adjustment value/ Set value data

▲ Each controller is provided with an EEPROM. The adjustment/set values are collected to the MFP controller. If they are changed, they are sent back and saved.



▲ B. Each storage data

(Data saved by the PCU PWB)

| Counters | Adjustment value | Other |
|---|---|---|
| Drum rotation time counter (Accumulated time) | Developing bias voltage value | Serial number |
| Developer unit rotation time counter | Cleaning mode developing bias voltage value | Trouble history |
| Toner supply time (Block IC CHIP) | Main high voltage adjustment | Tray 1 size |
| Drum rotating time (Block IC CHIP) | Transfer charger voltage value | Tray 2 size |
| Total counter | Transfer belt cleaning voltage value | Manual destination information |
| Maintenance counter | Toner concentration reference value | |
| Developing counter | Density correction start set time (Developer unit) | Tray 3 destination information |
| Drum counter | Density correction rotation time (Developer tank) | Tray 4 destination information |
| Toner cartridge counter | Density correction amount (Developer tank) | Tray 1 paper remaining quantity data |
| Valid paper counter | Correction execution direction, upper/lower limit (Developer tank) | Tray 2 paper remaining quantity data |
| Tray 1 paper feed counter | Toner concentration temperature correction (low temperature side) correction amount | Tray 3 paper remaining quantity data |
| Tray 2 paper feed counter | Toner concentration temperature correction (low temperature side) set temperature | Tray 4 paper remaining quantity data |
| Tray 3 paper feed counter | Toner concentration temperature correction (low temperature side) release temperature | Final toner concentration sensor output value |
| Tray 4 paper feed counter | Toner concentration temperature correction (high temperature) correction amount | Toner cartridge IC CHIP destination |
| Manual paper feed counter | Toner concentration temperature correction (high temperature side) judgment temperature | Counter mode setting |
| ADU paper feed counter | Toner concentration temperature correction (high temperature side) judgment voltage | White paper exit count setting |
| Staple counter | Toner concentration temperature correction (high temperature side) correction value | Trouble memory mode setting |
| Punch counter | Toner concentration temperature correction (low temperature side) release time | Fusing operation mode (Prevention against curl) |
| Main unit right-side paper exit counter | Toner concentration temperature correction (high temperature side) toner concentration delay time | CE mark conforming operation mode |
| Side LCC paper feed counter | Multi-purpose width adjustment value | Maintenance cycle |
| Insertor counter | Manual width adjustment value | Print stop setting when developer life over |
| Saddle staple counter | Heater lamp temperature (Center, normal control) | Saddle alignment operation priority mode |
| | Lead edge adjustment | |

| Counters | Adjustment value | Other |
|----------|--|-------|
| | Led edge void set value | |
| | Rear edge void set value | |
| | Side edge setting | |
| | Print off-center adjustment value | |
| | Resist amount adjustment value | |
| | Laser power adjustment value | |
| | PPD1 sensor adjustment | |
| | Process correction inhibit allow set value | |
| | Developing bias rising correction wait time | |
| | Developing bias rising correction adjustment value | |
| | Built-in finisher jogger position adjustment | |
| | Saddle adjustment value | |

▲ (Data saved by the scanner control PWB)

| Counters | Adjustment value | Other |
|------------------------|---|---|
| Scan counter | Document lead edge adjustment value | Exposure mode set value |
| SPF paper pass counter | Document off-center adjustment value | Scanner serial number |
| SPF stamp counter | Document image loss amount adjustment value | Document image loss amount adjustment value |
| | Magnification ratio adjustment value | |
| | SPF resist amount adjustment value | |
| | Exposure motor speed adjustment value | |
| | Platen document detection adjustment value | |
| | SPF size width detection adjustment value | |
| | Touch panel adjustment value | |
| | Exposure level adjustment value | |
| | Y change value | |
| | OC/SPF exposure correction value | |
| | Shading adjustment value (CCD/CIS) | |
| | CCD shading start position adjustment value | |

▲ (Data saved by the MFP control PWB)

| Counters | Adjustment value | Other |
|-------------------------|--------------------|---|
| Copy counter | FAX SOFT SW., etc. | Trouble history |
| Printer counter | | JAM history |
| FAX receive counter | | Destination setting |
| FAX send counter | | Language setting |
| All valid paper counter | | Toner save mode setting |
| Trouble counter | | 13" setting |
| JAM counter | | Auditor setting |
| | | Counter mode setting |
| | | Trouble memory mode setting |
| | | Center binding mode AMS setting |
| | | PC/MODEM communication trouble detection YES/NO setting |
| | | Tag number set value |
| | | Printers set values |
| | | Network set value |

▲ (Detailed list)

| Main code | Sub code | Operation contents | Data save destination/Target | | |
|-----------|----------|---|------------------------------|---------|--------|
| | | | MFP | Scanner | Engine |
| 1 | 01 | Mirror scan operation | | ● | |
| | 02 | Optical system sensor check | | ● | |
| 2 | 01 | SPF operation aging | | ● | |
| | 02 | SPF sensor check | | ● | |
| | 03 | SPF individual load check | | ● | |
| 3 | 02 | Finisher sensor check | | | ● |
| | 03 | Finisher individual load check | | | ● |
| | 10 | Finisher adjustment | | | ● |
| | 30 | Insertion sensor check | | | ● |
| | 31 | Insertion load operation | | | ● |
| | 32 | Insertion size width detection adjustment value input | | | ● |
| 4 | 02 | LCC sensor check | | | ● |
| | 03 | LCC individual load check | | | ● |
| 5 | 01 | Lamp /LED all ON | ● | | |
| | 02 | Heater lamp check | | | ● |
| | 03 | Copy lamp check | | ● | |
| | 04 | Discharge lamp check | | | ● |
| 6 | 01 | Transport system load operation (Clutch/Solenoid) | | | ● |
| | 02 | Fan motor operation | | | ● |
| | 03 | Transfer separation motor operation | | | ● |
| 7 | 01 | Operation registration (No detection of JAM, No detection of developer tank, aging, No warm-up, intermittent operation, No shading, etc.) | ● | | |
| | 06 | Intermittent aging frequency setting | ● | | |
| | 08 | Warm-up time display (No aging) | | | ● |
| 8 | 01 | Developing bias output setting, check | | | ● |
| | 02 | Charging output setting, check | | | ● |
| | 06 | THV (transfer) output setting, check | | | ● |
| | 17 | Transfer roller output setting, check | | | ● |
| | 18 | Transfer cleaning roller output setting, check | | | ● |
| | 19 | Fusing roller bias output check | | | ● |
| 9 | 01 | ADU load operation (Clutch/Solenoid) | | | ● |
| | 02 | ADU sensor check | | | ● |
| 10 | 01 | Toner motor operation check | | | ● |
| | 02 | Toner remaining quantity detection sensor check | | | ● |
| 13 | | "U1" trouble cancel | ● | | |
| 14 | | Trouble cancel | ● | | |
| 15 | | LCC trouble cancel | ● | | ● |
| 16 | | "U2" trouble cancel | ● | ● | ● |
| 17 | | "PF" trouble cancel | ● | | |
| 21 | 01 | Maintenance cycle setting | | | ● |
| 22 | 01 | Each counter display (Total/ Maintenance/ Developer/ RADF/ Staple/ Tray) | ● | ● | ● |
| | 02 | JAM/Trouble counter display | ● | | |
| | 03 | JAM history display | ● | | |
| | 04 | Trouble code display | ● | | |
| | 05 | ROM version data display | ● | ● | ● |
| | 06 | Various data print | ● | | |
| | 07 | Key operator code display | ● | | |
| | 08 | Document/staple counter display | | ● | ● |
| | 09 | Paper feed counter display | | | ● |
| | 10 | Main unit system configuration check | ● | | |
| | 11 | FAX send/receive counter display | ● | | |
| | 12 | SPF JAM history display | ● | | |
| | 13 | Process data display | | | ● |
| | 19 | Network scanner-related counter display | ● (FAX) | | |
| 23 | 02 | JAM/trouble data print | ● | | |
| | 80 | Various data print | ● | | |

| Main code | Sub code | Operation contents | Data save destination/Target | | |
|-----------|----------|--|------------------------------|---------|--------|
| | | | MFP | Scanner | Engine |
| 24 | 01 | JAM/trouble counter clear | ● | | |
| | 02 | Paper feed counter clear | ● | | |
| | 03 | Document/staple counter clear | | ● | ● |
| | 04 | Maintenance counter clear | | | ● |
| | 05 | Developer counter clear | | | ● |
| | 06 | Copy counter clear | ● | | |
| | 07 | Drum counter clear | | | ● |
| | 09 | Printer/other counter clear | ● | | |
| | 10 | FAX counter clear | ● | | |
| | 11 | Various rotation time timer clear | | | ● |
| | 15 | Network scanner-related counter clear | ● (FAX) | | |
| 25 | 01 | Toner concentration sensor monitor | | | ● |
| | 02 | Auto developer adjustment | | | ● |
| 26 | 02 | Size setting | | | ● |
| | 03 | Auditor setting | ● | | |
| | 05 | Counter mode setting | | | ● |
| | 06 | Destination setting | ● | | |
| | 10 | Network scanner trial mode setting | ● | | |
| | 18 | Toner save mode setting | ● | | |
| | 30 | CE mark conformity control inhibit/allow setting | | | ● |
| | 35 | Trouble memory mode setting | | | ● |
| | 38 | Print stop setting when life over | | | ● |
| | 41 | Center binding mode AMS setting | ● | | |
| | 50 | Black/white reverse function valid/invalid setting | ● | | |
| 27 | 01 | PC/MODEM communication trouble (U7-00) detection YES/NO setting | ● | | |
| | 05 | Tag number setting | ● | | |
| | | | ● | | |
| 30 | 01 | Main unit sensor check | | | ● |
| | 02 | Tray sensor check | | | ● |
| 40 | 01 | Manual paper feed size width detection check | | | ● |
| | 02 | Manual paper feed size width detection level adjustment | | | ● |
| | 07 | Manual paper feed size width detection adjustment value input | | | ● |
| | 11 | MPT size width detection check | | | ● |
| | 12 | MPT size width detection level adjustment | | | ● |
| 41 | 01 | Document size detection photo sensor check | | ● | |
| | 02 | Document size detection photo sensor detection level | | ● | |
| | 03 | Document size detection photo sensor light receiving/detection level check | | ● | |
| 43 | 01 | Fusing temperature control temperature setting (Normal/Energy-save mode) | | | ● |
| | 03 | Fusing roller RPM setting | | | ● |
| 44 | 01 | Process correction inhibit/allow setting | | | |
| | 02 | DM/ID sensor gain adjustment | | | |
| | 04 | Standard patch density setting | | | |
| | 05 | Patch making reference condition setting | | | ● |
| | 09 | Process control data display | | | ● |
| | 12 | Process control patch data display | | | ● |
| | 14 | Temperature/humidity sensor output monitor | | | ● |
| | 16 | Toner concentration reference value check | | | ● |

| Main code | Sub code | Operation contents | Data save destination/Target | | |
|-----------|----------|--|------------------------------|---------|--------|
| | | | MFP | Scanner | Engine |
| 46 | 02 | Copy exposure level adjustment (binary) | ● | ● | |
| | 09 | Copy exposure level adjustment/individual setting (Text binary) | ● | ● | |
| | 10 | Copy exposure level adjustment, individual setting (Text/Photo binary) | ● | ● | |
| | 11 | Copy exposure level adjustment, individual setting (Photo binary) | ● | ● | |
| | 12 | FAX exposure level adjustment (1 mode auto adjustment) | ● | ● | |
| | 13 | FAX exposure level adjustment, individual setting (Normal text) | ● | ● | |
| | 14 | FAX exposure level adjustment, individual setting (Fine) | ● | ● | |
| | 15 | FAX exposure level adjustment, individual setting (Super Fine) | ● | ● | |
| | 16 | FAX exposure level adjustment, individual setting (Ultra Fine) | ● | ● | |
| | 17 | Shading reference value change (Gain adjustment) | | ● | |
| | 18 | Y' change (Copier mode) | | ● | |
| | 19 | Exposure mode setting | | ● | |
| | 20 | OC/SPF exposure correction | | ● | |
| | 21 | Scanner exposure level adjustment (1 mode auto adjustment) | | ● | |
| | 22 | Scanner exposure level adjustment, individual setting (Normal text) | | ● | |
| | 23 | Scanner exposure level adjustment, individual setting (Fine) | | ● | |
| | 24 | Scanner exposure level adjustment, individual setting (Super Fine) | | ● | |
| | 25 | Scanner exposure level adjustment, individual setting (Ultra Fine) | | ● | |
| | 27 | Y' change (Scanner mode) | | ● | |
| | 31 | Copy sharpness setting | | ● | |
| | 39 | FAX sharpness setting | | ● | |
| | 45 | FAX exposure level adjustment, individual setting (600dpi) | ● | ● | |
| 48 | 01 | Magnification ratio adjustment (by Input/Output) | ● | ● | |
| | 05 | Motor speed adjustment | | ● | |
| 50 | 01 | Copy lead edge adjustment (Document table) | ● | ● | ● |
| | 02 | Lead edge adjustment (Document table simple type) | ● | ● | ● |
| | 05 | Print lead edge adjustment | ● | | ● |
| | 06 | Copy lead edge adjustment (SPF) | ● | ● | ● |
| | 07 | Copy lead edge adjustment (SPF simple type) | ● | ● | ● |
| | 10 | Print off-center adjustment | ● | | ● |
| | 12 | Document off-center adjustment | ● | ● | |
| 51 | 02 | Resist amount adjustment | | ● | ● |
| | 06 | SPF size width detection level adjustment | | ● | |
| 53 | 07 | SPF size width detection adjustment value input | | ● | |
| | 08 | SPF scan position adjustment | | ● | |
| | 01 | Engine soft SW change and check | | ● | ● |
| 55 | 02 | Scanner soft SW change and check | | ● | |
| | 03 | Controller soft SW change and check | ● | | |
| 56 | 01 | Data transfer | ● | | |
| 60 | 01 | ICU image DRAM read/write check | ● | | |
| 61 | 01 | LSU operation check | | | ● |
| | 02 | Laser power setting (Copier) | | | ● |
| | 03 | Laser power setting (FAX) | | | ● |
| | 04 | Laser power setting (Printer) | | | ● |
| 62 | 01 | Hard disk format | ● | | |
| | 02 | Hard disk read/write check | ● | | |
| | 03 | Hard disk read/write check (All areas) | ● | | |
| | 06 | HDD self diag | ● | | |
| | 07 | Self diag error log print | ● | | |
| | 08 | Hard disk format (Excluding the system area) | ● | | |
| | 10 | Job complete list delete | ● | | |
| | 11 | Document filing data delete | ● | | |
| 63 | 01 | Shading check | | ● | |
| | 02 | Shading execution | | ● | |
| | 07 | White plate scan start position adjustment | | ● | |
| 64 | 01 | Self print | ● | | |
| 65 | 01 | Touch panel adjustment | | ● | |
| | 02 | Touch panel check | | ● | |

| Main code | Sub code | Operation contents | Data save destination/Target | | |
|-----------|----------|---|------------------------------|---------|--------|
| | | | MFP | Scanner | Engine |
| 66 | 01 | FAX-related soft SW setting check/change | ● | | |
| | 02 | FAX-related soft SW clear (Excluding FAX adjustment values) | ● | | |
| | 03 | FAX-related memory check | ● | | |
| | 04 | Signal send mode (Signal send level: Max.) | ● | | |
| | 05 | Signal send mode (Signal send level: Soft SW setting) | ● | | |
| | 06 | Confidential pass code print | ● | | |
| | 07 | Image memory content output | ● | | |
| | 08 | Voice message reproduction (Signal send level: Max.) | ● | | |
| | 09 | Voice message reproduction (Signal send level: Soft SW setting) | ● | | |
| | 10 | Image memory clear | ● | | |
| | 11 | 300bps signal send (Signal send level: Max.) | ● | | |
| | 12 | 300bps signal send (Signal send level: Soft SW setting) | ● | | |
| | 13 | Dial number registration | ● | | |
| | 14 | Dial test (10PPS make time setting & delivery test) | ● | | |
| | 15 | Dial test (20PPS make time setting & send test) | ● | | |
| | 16 | Dial test (DTMF signal adjustment & send test) | ● | | |
| | 17 | DTMF signal send mode (Signal send level: Max.) | ● | | |
| | 18 | DTMF signal send mode (Signal send level: Soft SW setting) | ● | | |
| | 19 | Address book backup (WR TO FLASH) | ● | | |
| | 20 | Address book backup (RD FROM FLASH) | ● | | |
| | 21 | FAX information print | ● | | |
| | 23 | FAX program download | ● | | |
| | 24 | FAST memory data clear | ● | | |
| | 25 | MODEM dial-in FAX number registration | ● | | |
| | 26 | MODEM dial-in telephone number registration | ● | | |
| | 27 | Voice warp transfer destination registration | ● | | |
| | 29 | Address book clear | ● | | |
| | 30 | TEL/LIU status change check | ● | | |
| | 31 | TEL/LIU setting | ● | | |
| | 32 | Receive data check | ● | | |
| | 33 | Signal detection check | ● | | |
| | 34 | Communication time measurement display | ● | | |
| | 35 | MODEM program rewrite | ● | | |
| | 36 | MFP controller I/F check | ● | | |
| | 39 | FAX destination registration | ● | | |
| | 60 | (Blind) ACR data registration | ● | | |
| 67 | 02 | Centro port check | ● | | |
| | 11 | Select IN signal setting | ● | | |
| | 16 | Network card check | ● | | |

2. Outline and purpose

The simulation has the following functions to grasp the machine operating status, identify the trouble position and causes in an earlier stage, and make various setups and adjustments speedily for improving the serviceability of the machine.

- 1) Various adjustments
- 2) Setup of specifications and functions
- 3) Canceling troubles
- 4) Operation check
- 5) Various counters check, setup, and clear
- 6) Machine operating status (operation history) data check, clear
- 7) Transfer of various data (adjustments, setup, operations, counters)

The operating procedures and the displays differ depending on the form of the operation panel of the machine.

3. Code-type simulation

A. Operating procedures and operations

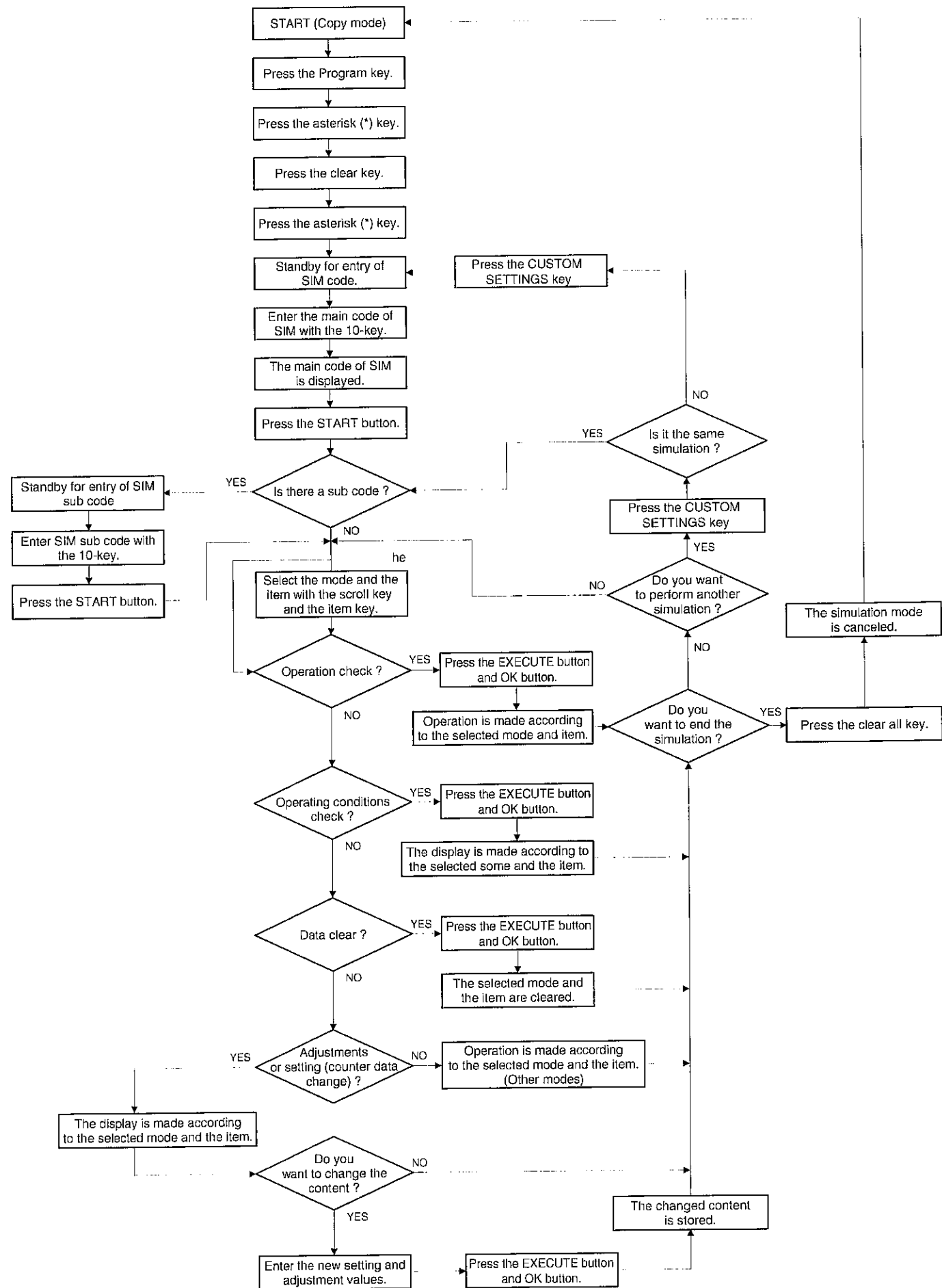
* Entering the simulation mode

- 1) Copy mode key ON → Program key ON → Asterisk (*) key ON → CLEAR key ON → Asterisk (*) key ON → Ready for input of a main code of simulation
- 2) Entering a main code with the 10-key → START key ON
- 3) Entering a sub code with the 10-key → START key ON
- 4) Select an item with the scroll key and the item key.
- 5) The machine enters the mode corresponding to the selected item. Press START key or EXECUTE key to start the simulation operation.

To cancel the current simulation mode or to change the main code and the sub code, press the user setup key.

* Canceling the simulation mode to return to the normal mode

- 1) Press CA key.



B. Simulation list

(1) Main/ Sub

| Code | | Function (Purpose) | Purpose | Section | | Item | |
|------|-----|--|----------------------|--|--|-----------|--|
| Main | Sub | | | | | | |
| 1 | 1 | Used to check the operations of the scanner (read) unit and its control circuit. | Operation test/Check | Optical (Image scanning) | | Operation | |
| | 2 | Used to check the operation of sensor and detector in the scanning (read) section and the related circuit. | Operation test/Check | Optical (Image scanning) | | Operation | |
| 2 | 1 | Used to check the operations of the automatic document feeder unit and the control circuit. | Operation test/Check | DSPF | | Operation | |
| | 2 | Used to check the operations of the sensors and detectors in the automatic document feeder unit and the related circuits. | Operation test/Check | DSPF | | Operation | |
| | 3 | Used to check the operations of the loads in the automatic document feeder unit and the control circuits. | Operation test/Check | DSPF | | Operation | |
| 3 | 2 | Used to check the operation of sensor and detector in the finisher and the related circuit. | Operation test/Check | Finisher | | Operation | |
| | 3 | Used to check the operation of the load in the finisher and the control circuit. | Operation test/Check | Finisher | | Operation | |
| | 10 | Finisher (AR-F16) adjustment | Adjustment | Finisher | | Operation | |
| | 30 | Used to check the operations of the sensors and detectors in the inserter. | Operation test/Check | Inserter | | | |
| | 31 | Used to check the operations of the loads in the inserter and the related circuits. | Operation test/Check | Inserter | | Operation | |
| | 32 | Inserter paper width detection level setting. | Setting (Adjustment) | Inserter | | Operation | |
| 4 | 2 | Used to check the operations of the sensors and detectors in the paper feed section (large capacity tray) and the related circuit. | Operation test/Check | Paper feed | | Operation | |
| | 3 | Used to check the operations of the loads in the paper feed section (large capacity tray) and the related circuit. | Operation test/Check | Paper feed | | Operation | |
| 5 | 1 | Used to check the operation of the display, LCD in the operation panel, and control circuit. | Operation test/Check | Operation (Display/Operation key) | | Operation | |
| | 2 | Used to check the operation of the heater lamp and the control circuit. | Operation test/Check | Fixing (Fusing) | | Operation | |
| | 3 | Used to check the operation of the scanner lamp and the control circuit. | Operation test/Check | Optical (Image scanning) | | Operation | |
| | 4 | Used to check the operation of the discharge lamp and the related circuit. | Operation test/Check | Process | | Operation | |
| 6 | 1 | Used to check the operation of the paper transport system loads and the control circuit. | Operation test/Check | Paper transport (Discharge/Switchback/Transport) | | Operation | |
| | 2 | Used to check the operations of each fan motor and its control circuit. | Operation test/Check | Other | | Operation | |
| | 3 | Used to check the operations of the transfer unit and the related circuit. | Operation test/Check | Process (Transfer) | | Operation | |

| Code | | Function (Purpose) | Purpose | Section | | Item | |
|------|-----|--|---------------------------------|---|--|----------------|---------|
| Main | Sub | | | | | | |
| 7 | 1 | Used to set the operating conditions of aging. | Setting | | | Operation | |
| | 6 | Used to set the intermittent aging cycle. | Setting | | | Operation | |
| | 8 | Used to set the warm-up time display YES/NO. | Setting | | | Operation | |
| 8 | 1 | Used to check and adjust the operations of the developing voltage of each color and the control circuit. | Adjustment/Operation test/Check | Image process (Photoconductor/ Developing/ Transfer/Cleaning) | | | |
| | 2 | Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit. | Adjustment/Operation test/Check | Image process (Photoconductor/ Developing/ Transfer/Cleaning) | | | |
| | 6 | Used to check and adjust the operation of the transfer voltage and the control circuit. | Adjustment/Operation test/Check | Image process (Photoconductor/ Developing/ Transfer/ Cleaning)/Transfer | | | |
| | 17 | Used to check and adjust the operation of the transfer voltage and the related circuit. (Transfer belt cleaning mode) | Operation test/Check | Image process (Photoconductor/ Developing/ Transfer/Cleaning) | | | |
| | 18 | Used to check and adjust the voltage of the transfer CL roller cleaning/ transfer CL roller print mode and the control circuit. (Not used) | Adjustment/Operation test/Check | Image process (Photoconductor/ Developing/ Transfer/Cleaning) | | | |
| | 19 | Used to check and adjust the fusing bias voltage and the control circuit. (Not used) | Adjustment/Operation test/Check | Fusing | | | |
| 9 | 1 | Used to check and adjust the operation of the load (clutch/ solenoid) in the duplex section and the control circuit. | Operation test/Check | Duplex | | Operation | |
| | 2 | Used to check the operations of the sensors and detectors in the duplex section and its control circuit. | Operation test/Check | Duplex | | Operation | |
| 10 | 1 | Used to check the operations of the toner motor and the related circuit. | Operation test/Check | Process (Developing) | | Operation | |
| | 2 | Used to check the operations of the toner remaining quantity sensor and the related circuit. | Operation test/Check | Process (Developing) | | Operation | |
| 13 | 0 | Used to cancel the self-diag "U1" trouble. (Only when FAX is installed.) | Clear/Cancel (Trouble etc.) | FAX | | Trouble | |
| 14 | 0 | Used to cancel excluding the self-diag U1/LCC/U2/PF troubles. | Clear/Cancel (Trouble etc.) | | | Trouble | Error |
| 15 | 0 | Used to cancel the self-diag "U6-09, F3-12, 22" (large capacity paper feed tray, paper feed trays 1, 2) troubles. | Clear/Cancel (Trouble etc.) | LCC | | Trouble | |
| 16 | 0 | Used to cancel the self-diag U2 troubles. | Clear/Cancel (Trouble etc.) | MFP control PWB, PCU PWB, scanner control PWB | | Trouble | |
| 17 | 0 | Used to cancel the PF troubles (when the copy inhibit command from the host computer is received). | Clear/Cancel (Trouble etc.) | Communication unit (TEL/LIU/ MODEM etc.) | | Trouble | Error |
| 21 | 1 | Used to set the maintenance cycle. | Setting | | | Specifications | Counter |

| Code | | Function (Purpose) | Purpose | Section | | Item | |
|------|-----|--|--|--------------------------------------|----------|----------------|---------------------|
| Main | Sub | | | | | | |
| 22 | 1 | Used to check the print count value in each section and each operation mode. (Used to check the maintenance timing.) | Adjustment/Setup/ Operation data output/ Check (Display/Print) | | | Counter | |
| | 2 | Used to check the total numbers of misfeed and troubles. (When the number of misfeed is considerably great, it is judged as necessary for repair. The misfeed rate is obtained by dividing this count value with the total counter value.) | Adjustment/Setup/ Operation data output/ Check (Display/Print) | | | Trouble | |
| | 3 | Used to check misfeed positions and the misfeed count of each position. (If the misfeed count is considerably great, it may be judged as necessary to repair.) | Adjustment/Setup/ Operation data output/ Check (Display/Print) | Sections other than SPF/DSPF section | | Trouble | Misfeed |
| | 4 | Used to check the trouble (self diag) history. | Adjustment/Setup/ Operation data output/ Check (Display/Print) | | | Trouble | |
| | 5 | Used to check the ROM version of each unit (section). | Other | | | Software | |
| | 6 | Used to output the list of the setting and adjustment data (simulations, FAX soft switch, counters). | Adjustment/Setup/ Operation data output/ Check (Display/Print) | | | Data | Adjust/Setting data |
| | 7 | Used to display the key operator code. (This simulation is used when the customer forgets the key operator code.) | Adjustment/Setup/ Operation data output/ Check (Display/Print) | | | Data | User data |
| | 8 | Used to check the number of use of the finisher, the SPF, and the scan (reading) unit. | Adjustment/Setup/ Operation data output/ Check (Display/Print) | Optical (Image scanning) | Finisher | Counter | |
| | 9 | Used to check the number of use (print quantity) of each paper feed section. | Adjustment/Setup/ Operation data output/ Check (Display/Print) | Paper feed, ADU | | Counter | |
| | 10 | Used to check the system configuration (option, internal hardware). | Adjustment/Setup/ Operation data output/ Check (Display/Print) | | | Specifications | Options |
| | 11 | Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed) | Adjustment/Setup/ Operation data output/ Check (Display/Print) | FAX | | Data | |
| | 12 | Used to check the SPF misfeed positions and the number of misfeed at each position. (When the number of misfeed is considerably great, it can be judged as necessary for repair.) | Adjustment/Setup/ Operation data output/ Check (Display/Print) | DSPF | | Trouble | |
| 23 | 13 | Used to check the operating time of the process section (OPC drum, DV unit, toner bottle). | Adjustment/Setup/ Operation data output/ Check (Display/Print) | | | Counter | |
| | 19 | Used to check the values of the counters related to the scan mode and the internet FAX mode. | Adjustment/Setup/ Operation data output/ Check (Display/Print) | Scanner | | Counter | |
| | 2 | Used to check the trouble history of paper jam and misfeed. (If the number of misfeed and troubles is considerably great, it may be judged as necessary to repair.) | Adjustment/Setup/ Operation data output/ Check (Display/Print) | | | Trouble | |
| | 80 | Used to check the operations of the sensors and detectors in the paper feed and transport section. | Operation test/Check | Paper feed, paper transport | | Operation | |

| Code | | Function (Purpose) | Purpose | Section | | Item | |
|------|-----|---|----------------------|---|--|----------------|-----------------|
| Main | Sub | | | | | | |
| 24 | 1 | Used to clear the misfeed counter, the misfeed history, the trouble counter, and the trouble history. (The counters are cleared after completion of maintenance.) | Data clear | | | Counter | |
| | 2 | Used to clear the number of use (the number of prints) of each paper feed section. | Data clear | Paper feed | | Counter | |
| | 3 | Used to clear the number of use of the finisher, SPF, and the scan (reading) unit. | Data clear | | | Counter | |
| | 4 | Used to reset the maintenance counter. | Data clear | | | Counter | |
| | 5 | Used to reset the developer counter. (The developer counter of the DV unit which is installed is reset.) | Data clear | | | Counter | Developer |
| | 6 | Used to reset the copy counter. | Data clear | | | Counter | Copy |
| | 7 | Used to clear the OPC drum counter. (Perform this simulation when the OPC drum is replaced.) | Data clear | Image process (Photoconductor/ Developing/ Transfer/Cleaning) | | Counter | Photo conductor |
| | 9 | Used clear the printer mode print counter and the self print mode print counter. | Data clear | Printer | | Counter | |
| | 10 | Used to clear the FAX counter. (Only when FAX is installed) | Data clear | FAX | | Counter | |
| | 11 | Used to reset the OPC drum rotation time, and the DV unit rotation time counter. The developer counter in the DV unit installed is reset. | Data clear | Image process (Photoconductor/ Developing/ Transfer/Cleaning) | | Counter | Developer |
| | 15 | Used to clear the counters related to the scan mode and the internet FAX mode. | Data clear | | | Counter | |
| 25 | 1 | Used to check the operations of the developing section (toner concentration, humidity and toner concentration sensor, humidity sensor). (The toner concentration sensor output can be monitored.) | Operation test/Check | Process (Developing section) | | Operation | |
| | 2 | Used to make the initial setting of toner concentration when replacing developer. | Setting | Image process (Photoconductor/ Developing/ Transfer/Cleaning) | | | |
| 26 | 2 | Used to set the paper size of the large capacity tray (LCC) and the paper feed tray 2. (When the paper size is changed, this simulation must be executed to change the paper size in software.) | Setting | Paper feed | | Setting | |
| | 3 | Used to set the specifications of the auditor. Setting must be made according to the auditor use conditions. | Setting | Auditor | | Specifications | |
| | 5 | Used to set the count mode of the total counter and the maintenance counter. | Setting | | | Specifications | Counter |
| | 6 | Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination. | Setting | | | Specifications | Destination |
| | 10 | Used to set the network scanner trial mode. | Setting | | | Operation | |

| Code | | Function (Purpose) | Purpose | Section | | Item | |
|------|-----|--|----------------------|--|--|----------------|-------------------------|
| Main | Sub | | | | | | |
| 26 | 18 | Used to set YES/NO of toner save operation. (This function is valid only in Japan and UK versions. (Depends on the destination setting of SIM26-6.) For the other destinations, the same setting can be made by the user program P22.) | Setting | | | Specifications | Operation mode |
| | 30 | Used to set the operation mode conforming to the CE mark (Europe safety standards). (Conforming to soft start when driving the fusing heater lamp.) | Setting | | | Specifications | Operation mode (Common) |
| | 35 | Used to set whether the same continuous troubles are displayed as one trouble or the series of troubles with SIM 22-4 when the same troubles occur continuously. | Setting | | | Specifications | |
| | 38 | Used to set CONTINUE/STOP of printing when maintenance timing is over and the count value reaches 110% of replacement timing (life). | Setting | Other | | Specifications | |
| | 41 | Used to set YES/NO of the automatic magnification ratio selection (AMS) in the pamphlet mode. | Setting | | | Specifications | Operation mode (Common) |
| | 50 | Black-White reverse YES/NO setting | Setting | | | Specifications | Operation |
| | 52 | Used to set whether non-print paper (insertion paper, cover paper) (blank image print paper) is counted up or not. | Setting | Paper transport (Discharge/Switchback/Transport) | | Specifications | Operation mode |
| | 68 | Used to set ENABLE/DISABLE of the CA key cancel function of print stop. | Setting | | | Specifications | Operation |
| 27 | 1 | Used to set the specifications for operations in case of communication trouble between the host computer and MODEM (machine side). (When communication trouble occurs between the host computer MODEM and the machine, the self diag display (U7-00) is printed and setting for inhibition of print or not is made.) | Setting | Communication unit (TEL/LIU/MODEM etc.) | | Specifications | Operation mode |
| | 5 | Used to enter the machine tag No. (This function allows to check the tag No. of the machine with the host computer.) | Setting | Communication unit (TEL/LIU/MODEM etc.) | | Specifications | Operation mode |
| 30 | 1 | Used to check the operation of sensors and detectors in other than the paper feed section and the operations of the related circuits. | Operation test/Check | | | Operation | |
| | 2 | Used to check the operation of sensors and detectors in the paper feed section and the related circuits. | Operation test/Check | Paper feed | | Operation | |
| 40 | 1 | Used to check the operation of the manual feed tray paper size detector and the related circuit. (The operation of the manual feed tray paper size detector can be monitored with the LCD display.) | Operation test/Check | Paper feed | | Operation | |
| | 2 | Used to adjust the manual paper feed tray paper width detector detection level. | Adjustment | Paper feed | | Operation | |
| | 7 | Used to enter the manual paper feed tray paper width adjustment value. | Adjustment/Setup | Paper feed | | Operation | |

| Code | | Function (Purpose) | Purpose | Section | | Item | |
|------|-----|--|--|---|--|-----------|------------------------------------|
| Main | Sub | | | | | | |
| 40 | 11 | Used to check the multi-purpose tray width detection adjustment value. | Operation test/Check | Paper feed | | Operation | |
| | 12 | Used to check the multi-purpose tray width detection adjustment value. | Adjustment/Setup | Paper feed | | Operation | |
| 41 | 1 | Used to check the operation of the document size sensor and the related circuit. (The operation of the document size sensor can be monitored with the LCD display.) | Operation test/Check | Other | | Operation | |
| | 2 | Used to adjust the document size sensor sensing level. | Adjustment | Other | | Operation | |
| | 3 | Used to check the operation of the document size sensor and the related circuit. (The document size sensor output level can be monitored with the LCD display.) | Operation test/Check | Other | | Operation | |
| 43 | 1 | Used to set the fusing temperature in each operation mode. | Setting | Fixing (Fusing) | | Operation | |
| | 3 | Fusing roller RPM setting. | Setting (Adjustment) | Fixing (Fusing) | | Operation | |
| 44 | 1 | Used to set enable/disable of correction operations in the image forming (process) section. | Setting | Image process (Photoconductor/Developing/Transfer/Cleaning) | | Operation | |
| | 2 | Used to perform the gain adjustment (image density sensor LED current adjustment) of the image density sensor and the gain adjustment (OPC drum marking sensor LED current adjustment) of the OPC drum marking sensor. | Adjustment | Image process (Photoconductor) | | Operation | |
| | 4 | Used to set the target density level in the image density correction. | Setting | Image process (Photoconductor/Developing) | | Operation | |
| | 5 | Used to set the reference developing bias voltage, the reference main charger grid voltage, and the laser power in the image density correction. | Setting | Image process (Photoconductor/Developing) | | Operation | |
| | 9 | Used to check the data related to the image forming section correction (process correction) result (corrected main charger grid voltage, the developing bias voltage, and the laser power voltage in each print mode). (This simulation allows to check that correction is performed normally or not.) | Adjustment/Setup/Operation data output/Check (Display/Print) | Image process (Photoconductor/Developing/Transfer/Cleaning) | | Data | Operation data (Machine condition) |
| | 12 | Used to display sampling toner image patch density data in image density correction. (Used to check that the correction is performed normally or not.) | Adjustment/Setup/Operation data output/Check (Display) | Image process (Photoconductor/Developing) | | Operation | |
| | 14 | Used to check the output level of the temperature sensor and the humidity sensor. | Adjustment/Setup/Operation data output/Check (Display) | Image process (Photoconductor/Developing) | | Operation | |
| | 16 | Used to check the toner concentration control data. | Adjustment/Setup/Operation data output/Check (Display) | Image process (Developing) | | Operation | |

| Code | | Function (Purpose) | Purpose | Section | | Item | |
|------|-----|---|------------|--------------------------|----------|-----------------|---------|
| Main | Sub | | | | | | |
| 46 | 2 | Used to adjust the copy density in all the copy modes (Auto, Text, Text/Photo, and Photo mode). | Adjustment | | | Picture quality | Density |
| | 9 | Used to adjust the print density for each density level (display value) in the copy mode (binary - Text mode). An optional print density can be set for each density level (display value). | Adjustment | | | Picture quality | Density |
| | 10 | Used to adjust the print density for each density level (display value) in the copy mode (binary - Text/Photo mode). An optional print density can be set for each density level (display value). | Adjustment | | | Picture quality | |
| | 11 | Used to adjust the print density for each density level (display value) in the copy mode (binary - Photo mode). An optional print density can be set for each density level (display value). | Adjustment | | | Picture quality | Density |
| | 12 | Used to adjust the print density in the FAX mode (all modes). | Adjustment | | | Picture quality | |
| | 13 | Used to adjust the print density in the FAX mode (each normal mode). (Only when FAX is installed.) | Adjustment | | | Picture quality | |
| | 14 | Used to adjust the print density in the FAX mode (each fine mode). (Only when FAX is installed.) | Adjustment | | | Picture quality | |
| | 15 | Used to adjust the print density in the FAX mode (each super fine mode). (Only when FAX is installed.) | Adjustment | | | Picture quality | |
| | 16 | Used to adjust the print density in the FAX mode (each ultra fine mode). (Only when FAX is installed.) | Adjustment | | | Picture quality | |
| | 17 | Used to set the gain in shading correction. | Setting | Optical (Image scanning) | CCD, CIS | Operation | |
| | 18 | Used to adjust the gamma (density gradient) in the copy mode. | Adjustment | | | Picture quality | Density |
| | 19 | Used to set the auto mode operation specifications in each mode (copy, scan, FAX). | Adjustment | | | Picture quality | Density |
| | 20 | Used to adjust the copy density correction in the SPF copy mode for the document table copy mode. The adjustment is made so that the copy density becomes the same as that of the document table copy mode. | Adjustment | SPF | | Picture quality | Density |
| | 21 | Used to adjust the scanner exposure level in all the scanner modes. | Adjustment | | | Picture quality | Density |
| | 22 | Used to adjust the scanner exposure level in the normal text mode. | Adjustment | | | Picture quality | Density |
| | 23 | Used to adjust the scanner exposure level in the fine text mode. | Adjustment | | | Picture quality | Density |
| | 24 | Used to adjust the scanner exposure level (in the super fine text mode). | Adjustment | | | Picture quality | Density |
| | 25 | Used to adjust the scanner exposure level in the ultra fine text mode. | Adjustment | | | Picture quality | Density |
| | 27 | Used to adjust the gamma (density gradient) of the network scanner mode. | Adjustment | | | Picture quality | |

| Code | | Function (Purpose) | Purpose | Section | | Item | |
|------|-----|---|------------|--|--|-----------------|----------------|
| Main | Sub | | | | | | |
| 46 | 31 | Used to adjust sharpness of the copy mode. | Adjustment | | | Picture quality | |
| | 39 | Used to adjust sharpness of the FAX mode. | Adjustment | | | Picture quality | |
| | 45 | Used to adjust the image density in the FAX mode (600dpi). | Adjustment | | | Picture quality | |
| 48 | 1 | Used to adjust the copy magnification ratio (in the main scanning and the sub scanning directions). | Adjustment | Optical (Image scanning) | | Picture quality | |
| | 5 | Used to adjust the copy magnification ratio in the sub scanning direction. | Adjustment | Optical (Image scanning) | | Picture quality | |
| 50 | 1 | Used to adjust the copy image position and the void area (image loss) adjustment on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-5 and 50-2 (Simplified method).) (Document table mode) | Adjustment | | | Picture quality | Image position |
| | 2 | Used to adjust the document scan position, the image print position, and the void area (image loss). (Simple adjustment) (This adjustment is the simple method of SIM 50-1.) (Document table mode) | Adjustment | | | Picture quality | Image position |
| | 5 | Used to adjust the print image position and the void area (image loss) on print paper. (Adjustment as the print engine) (This adjustment is reflected on all the FAX/printer/copy modes.) | Adjustment | | | Picture quality | |
| | 6 | Used to adjust the copy image position and void area (image loss) on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-7 (simple method).) (SPF mode) | Adjustment | | | Picture quality | |
| | 7 | Used to adjust the copy image position and void area (image loss) on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-6.) (SPF mode) | Adjustment | | | Picture quality | |
| | 10 | Used to adjust the print image off-center position. (Adjusted separately for each paper feed section.) | Adjustment | | | Picture quality | Image position |
| | 12 | Used to adjust the scan image off-center position. (Adjusted separately for each scan mode.) | Adjustment | | | Picture quality | Image position |
| | 27 | Used to adjust the image loss of the scan image in the FAX/scan mode. | Adjustment | | | Picture quality | |
| 51 | 2 | Used to adjust the contact pressure of paper on the resist roller of each section (each paper feed, duplex feed and SPF paper feed of the copier). (This adjustment is required when the print image position variations are considerably great or when paper jams occur frequently.) | Adjustment | Paper transport (Discharge/Switchback/Transport) | | Operation | |

| Code | | Function (Purpose) | Purpose | Section | | Item | |
|------|-----|--|--|----------------------------|--|---------------|----------------|
| Main | Sub | | | | | | |
| 53 | 6 | Used to adjust the DSPF width detection level. | Adjustment | | | Operation | |
| | 7 | Used to enter the SPF width detection adjustment value. | Adjustment/Setup/ Operation data output/ Check (Display/Print) | DSPF | | Operation | |
| | 8 | Used to adjust the document scan start position. (Used to adjust the scanner scan position in the SPF mode front scan.) | Adjustment | | | | |
| 55 | 1 | Used to set the specifications of the engine control operations. (PCU PWB) | Setting | | | Operation | Specifications |
| | 2 | Used to set the specifications of the scanner control operations. (Scanner control PWB) | Setting | | | Operation | Specifications |
| | 3 | Used to set the specifications of the controller operations. (MFP control PWB) | Setting | | | Operation | Specifications |
| 56 | 1 | Used to transfer the MFP controller data. (Used to repair the PWB.) | Data transfer | MFP controller | | Data transfer | |
| 60 | 1 | Used to check the MFP control (DRAM) operations (read/write). | Operation test/Check | ICU | | Operation | |
| 61 | 1 | Used to check the operation of the scanner (write) unit (LSU). | Operation test/Check | Scanner (write) unit (LSU) | | Operation | |
| | 2 | Used to adjust the laser power (absolute value) in the copy mode. | Adjustment | Scanner (write) unit (LSU) | | Operation | |
| | 3 | Used to adjust the laser power (absolute value) in the FAX mode. | Adjustment | Scanner (write) unit (LSU) | | Operation | |
| | 4 | Used to adjust the laser power (absolute value) in the printer mode. | Adjustment | Scanner (write) unit (LSU) | | Operation | |
| 62 | 1 | Used to format the hard disk. | Data clear | MFP controller (HDD) | | Clear | |
| | 2 | Used to check the operation of the hard disk (read/write). (Only in the model with a disk installed) (Partial check) | Operation test/Check | MFP controller (HDD) | | Operation | |
| | 3 | Used to check the operation of the hard disk (read/write). (All areas check) | Operation test/Check | MFP controller (HDD) | | Operation | |
| | 6 | Used to check the operations of the hard disk. (The self diag operation of the SMART function is executed.) | Operation test/Check | MFP controller (HDD) | | Clear | |
| | 7 | Used to check the operations of the hard disk. (The result of the self diag operation of the SMART function is printed out.) | Operation test/Check | MFP controller (HDD) | | Clear | |
| | 8 | Used to format the hard disk (the system area excluded). | Data clear | MFP controller (HDD) | | Clear | |
| | 10 | Used to delete a job complete list (also to delete job log data) | Data clear | MFP controller (HDD) | | Clear | |
| | 11 | Used to delete document filing data. (The management area (standard folder, user folder) is cleared.) | Data clear | MFP controller (HDD) | | Clear | |
| 63 | 1 | Used to check the result of shading correction. (The shading correction data are displayed.) | Adjustment/Setup/ Operation data output/ Check (Display/Print) | Optical (Image scanning) | | Operation | |
| | 2 | Used to execute shading. | Adjustment | Optical (Image scanning) | | Operation | |
| | 7 | Used to adjust the white plate scan start position for shading. (Document table mode) | Adjustment | Laser (Exposure) | | Operation | |

| Code | | Function (Purpose) | Purpose | Section | | Item | |
|------|-----|--|--|-----------------------------------|--|-----------|--|
| Main | Sub | | | | | | |
| 64 | 1 | Used to check the operation of the printer section (self-print operation). (The print pattern, the paper feed mode, the print mode, the print quantity, and the density can be optionally set.) | Operation test/Check | | | Operation | |
| 65 | 1 | Used to adjust the touch panel (LCD display section) detection position. | Adjustment | Operation (Display/Operation key) | | | |
| | 2 | Used to check the result of the touch panel (LCD display) detection position adjustment. (The coordinates are displayed.) | Adjustment/Setup/Operation data output/Check (Display/Print) | Operation (Display/Operation key) | | | |
| 66 | 1 | Used to change and check the FAX soft switch functions. (Used to change and check the functions provided for the FAX soft switches.) | Setting | FAX | | | |
| | 2 | Used to clear the FAX soft switch function data and to set to the default. (Excluding the adjustment values.) | Data clear | FAX | | Data | |
| | 3 | Used to check the operation of the FAX PWB memory (read/write). (This adjustment is required when the PWB is replaced with a new one.) | Operation test/Check | FAX | | Data | |
| | 4 | Used to check the output operation of data signals in each data output mode of FAX. (Used to check the operation of MODEM.) Send level: Max. (Only when FAX is installed) | Operation test/Check | FAX | | Operation | |
| | 5 | Used to check the output operation of data signals in each data output mode of FAX. (Used to check the operation of MODEM.) An output is sent at the send level set by the soft switch. (Only when FAX is installed) | Operation test/Check | FAX | | Operation | |
| | 6 | Used to print the confidential pass code. (Used when the confidential pass code is forgotten.) (Only when FAX is installed) | User data output/Check (Display/Print) | FAX | | Data | |
| | 7 | Used to print the image memory data (memory send/receive). (Only when FAX is installed) | User data output/Check (Display/Print) | FAX | | Data | |
| | 8 | Used to check the output operation of various sound signals of FAX. (Used to check the operation of the sound output IC.) Send level: Max. (Only when FAX is installed) | Operation test/Check | FAX | | Operation | |
| | 9 | Used to check the output operation of various sound signals of FAX. (Used to check the operation of the sound output IC.) An output is sent at the send level set by the soft switch. (Only when FAX is installed) | Operation test/Check | FAX | | Operation | |
| | 10 | Used to clear all data of the image memory (memory send/receive). The confidential data are also cleared at the same time. (Only when FAX is installed) | User data output/Check (Display/Print) | FAX | | Data | |
| | 11 | Used to check the output operation of FAX G3 mode 300bps. (Used to check the operation of MODEM.) Send level: Max. (Only when FAX is installed) | Operation test/Check | FAX | | Operation | |

| Code | | Function (Purpose) | Purpose | Section | | Item | |
|------|-----|---|--|---------|--|-----------|--|
| Main | Sub | | | | | | |
| 66 | 12 | Used to check the output operation of FAX G3 mode 300bps. (Used to check the operation of MODEM.) An output is send at the send level set by the soft switch. (Only when FAX is installed) | Operation test/Check | FAX | | Operation | |
| | 13 | Used to enter (set) the number of FAX dial signal output test. (The dial number set by this simulation is outputted when the dial signal output test is made by SIM 66-14 - 16.) (Only when FAX is installed) | Setting | | | Data | |
| | 14 | Used to set the make time in the FAX pulse dial mode (10pps) and to test the dial signal output. (The dial number signal set by SIM 66-13 is outputted.) Used to check troubles in dialing and to check the operation. (Only when FAX is installed) | Setting/Operation test/Check | FAX | | Operation | |
| | 15 | Used to set the make time in the FAX pulse dial mode (20pps) and to test the dial signal output. (The dial number signal set by SIM 66-13 is outputted.) Used to check troubles in dialing and to check the operation. (Only when FAX is installed) | Setting/Operation test/Check | FAX | | Operation | |
| | 16 | Used to check the dial signal (DTMF) output in the FAX tone dial mode. (The dial number signal set by SIM 66-13 is outputted.) The send level can be set to an optional level. Used to check troubles in dialing and to check the operation. (Only when FAX is installed) | Setting/Operation test/Check | FAX | | Operation | |
| | 17 | Used to check the dial signal (DTMF) output in the FAX tone dial mode. Send level: Max. Used to check the operation. (Only when FAX is installed) | Setting | FAX | | Operation | |
| | 18 | Used to check the dial signal (DTMF) output in the FAX tone dial mode. An output is sent at the send level set by the soft switch. Used to check the operation. (Only when FAX is installed) | Setting | FAX | | Operation | |
| | 19 | Used to back-up the HDD data into the Flash memory (optional FAX expansion memory: AR-MM9). (Only when FAX is installed) | Data transfer | FAX | | Data | |
| | 20 | Used to read the back-up data by SIM 66-19 to the SRAM/HDD. (Only when FAX is installed) | Data transfer | FAX | | Data | |
| | 21 | Used to print information related to FAX (various registrations, communication management, file management, system error protocol). (Only when FAX is installed) | Adjustment/Setup/Operation data output/Check (Display/Print) | FAX | | Data | |
| | 22 | Used to adjust the handset volume. (Only when the FAX is installed.) | Setting | FAX | | Operation | |
| | 23 | Used to download the FAX program. (Only when FAX is installed) Not used in the market. (For development) | Setting | FAX | | | |
| | 24 | Used to clear the FAST memory data. (Only when FAX is installed) | Clear | FAX | | Data | |

| Code | | Function (Purpose) | Purpose | Section | | Item | |
|------|-----|--|----------------------|----------------|--|----------------|---------------------------------|
| Main | Sub | | | | | | |
| 66 | 25 | Used to register the FAX number for Modem dial-in. (Only when FAX is installed) Not used in the market. (For development) | Setting | FAX | | Data | |
| | 26 | Used to register external telephone numbers for Modem dial-in. (Only when FAX is installed) Not used in the market. (For development) | Setting | FAX | | Data | |
| | 27 | Used to register the transfer number for voice warp. (Only when FAX is installed) Not used in the market. (For development) | Setting | FAX | | Data | |
| | 28 | Used to record voice messages. (Only when FAX is installed.) | Setting | FAX | | Data | |
| | 29 | Used to clear data related to an address book (one-touch registration, program registration/ expansion, relay memory box registration, each table content). | Clear | FAX | | Data | |
| | 30 | Used to check the change in the TEL/LIU status. | Operation test/Check | FAX | | Operation | |
| | 31 | Used to check the relay operation. | Operation test/Check | FAX | | Operation | |
| | 32 | Used to check the receive data (fixed data) from the line. | Operation test/Check | FAX | | Operation | |
| | 33 | Used to check the signal (BUSY TONE/CNG/CED/FNET/DTMF) detection. | Operation test/Check | FAX | | Operation | |
| | 34 | Used to measure the communication time of test image data. | Operation test/Check | FAX | | Operation | |
| | 35 | Modem program reloading (Only when FAX is installed) Not used in the market. (For development) | Setting | FAX | | Data | |
| | 36 | Used to check interface between MFPC controller and MDMC. (Check of the data line or the command line) | Operation test/Check | FAX | | Operation | |
| | 39 | Used to set the destination specifications. | Setting | FAX | | Specifications | Operation |
| | 60 | Used to set the ACR data. | Setting | FAX | | Operation | |
| 67 | 2 | Used to check the operation of the parallel I/F of the printer. (This simulation is for production only, and requires a special tool for execution. Not used in the market.) | Operation test/Check | MFP controller | | Operation | Interface/ Communicatio n |
| | 11 | Used to set YES/NO of the parallel I/ F select signal of the printer. | Setting | MFP controller | | Operation | Interface/ Communicatio n |
| | 16 | Used to check the operation of the network card. | Operation test/Check | MFP controller | | Operation | Interface/ Communicatio n |

C. Details

1

1-1

| | |
|---------------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the scanner (read) unit and its control circuit. |
| Section | Optical (Image scanning) |
| Item | Operation |

Operation/Procedure

- 1) Select the operation mode with 10-key.
- 2) Press START key.

The scanner performs scanning at the speed corresponding to the operation mode.

| | | |
|---|------------|----------------------|
| 1 | HIGH SPEED | High speed (220mm/s) |
| 2 | LOW SPEED | Low speed (110mm/s) |

| | |
|--|--|
| SIMULATION 1-1 SCANNER CHECK. SELECT 1-2, AND PRESS START. 1. HIGH SPEED 2. LOW SPEED | |
|--|--|

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and scanning is stopped.

| | |
|--|--|
| SIMULATION 1-1 SCANNER CHECK. EXECUTING... 1. HIGH SPEED 2. LOW SPEED | |
|--|--|

2

2-1

| | |
|---------------------------|---|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the automatic document feeder unit and the control circuit. |
| Section | DSPF |
| Item | Operation |

Operation/Procedure

- 1) Select the operation mode with 10-key.
- 2) Press START key.

The SPF repeat paper feed, transport, and paper exit at the speed corresponding to the operation mode.

The operation can be stopped by [CUSTOM SETTINGS] key.

| | | |
|---|-------------------------|------------|
| 1 | HIGH SPEED (220 mm/sec) | High speed |
| 2 | LOW SPEED (110 mm/sec) | Low speed |
| 3 | TOP SPEED (360 mm/sec) | Top speed |

| | |
|---|--|
| SIMULATION 2-1 SPF AGING TEST. SELECT 1-3, AND PRESS START. 1. HIGH SPEED 2. LOW SPEED 3. TOP SPEED | |
|---|--|

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped.

| | |
|---|--|
| SIMULATION 2-1 SPF AGING TEST. EXECUTING... 1. HIGH SPEED 2. LOW SPEED 3. TOP SPEED | |
|---|--|

1-2

| | |
|---------------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of sensor and detector in the scanning (read) section and the related circuit. |
| Section | Optical (Image scanning) |
| Item | Operation |

Operation/Procedure

The sensor and detector operation conditions are displayed.

The active sensors and detectors are highlighted.

- The scanner (read) unit is in the home position.: "MHPS" section is highlighted.
- The scanner (read) unit is not in the home position.: "MHPS" is normally displayed.

| | |
|------|------------------------------|
| MHPS | Optical system home position |
|------|------------------------------|

| | |
|--|--|
| SIMULATION 1-2 SCANNER SENSOR CHECK.. MHPS | |
|--|--|

2-2

| | |
|---------------------------|---|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the sensors and detectors in the automatic document feeder unit and the related circuits. |
| Section | DSPF |
| Item | Operation |

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The active sensors and detectors are highlighted.

| | |
|---------|---|
| SSET | SPF sensor |
| SOC | Open/close sensor |
| SCOV | Paper feed cover sensor |
| SPED2 | Document set sensor (Lower) |
| SPED1 | Document set sensor (Upper) |
| SPPD1 | Document transport sensor 1 |
| SPPD2 | Document transport sensor 2 |
| SPPD3 | Document transport sensor 3 |
| SPPD4 | Document transport sensor 4 |
| SPOD | Document exit sensor |
| SWDn | Document width sensor (n → 1 (inside) - 6 (outside)) |
| SPLSn | Document length sensor (n → 1 (inside) - 2 (outside)) |
| CISSET | CIS installation detection |
| STSET | Stamp unit installation sensor |
| STUD | Tray upper limit sensor |
| STLD | Tray lower limit sensor |
| SWD_LEN | SPF guide plate position (unit: 0.1mm) |
| SWD_AD | SPF document width detection volume output AD value |

| | | | |
|-------------------|-------|---------|-------|
| SIMULATION 2-2 | | | |
| SPF SENSOR CHECK. | | | |
| SSET | SOCD | SCOV | SPED2 |
| SPED1 | SPPD1 | SPPD2 | SPPD3 |
| SPPD4 | SPOD | SWD6 | SWD5 |
| SWD4 | SWD3 | SWD2 | SWD1 |
| SPLS2 | SPLS1 | CISSET | STSET |
| STUD | STLD | | |
| SWD_LEN: | 2100 | SWD_AD: | 600 |

2-3

| | |
|--------------------|---|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the loads in the automatic document feeder unit and the control circuits. |
| Section | DSPF |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press START key.
- The load selected in procedure 1 is operated.
- Press [CUSTOM SETTINGS] key to stop the operation of the load.

| | | |
|----|-----------|-----------------------------------|
| 1 | MOTOR (T) | Motor top speed |
| 2 | MOTOR (H) | Motor high speed |
| 3 | MOTOR (L) | Motor low speed |
| 4 | STRBC | Document transport brake clutch |
| 5 | STRC | Document feed transport clutch |
| 6 | SPFC | Document fed clutch |
| 7 | SRRC | Document resist clutch |
| 8 | SRRCB | Document resist brake clutch |
| 9 | STRRC | Document feed resist clutch |
| 10 | STRRBC | Document feed resist brake clutch |
| 11 | STMPs | Stamp solenoid |
| 12 | SLUM | Lift up motor |
| 13 | SPFFAN | SPF fan motor |

| | | | |
|--|--------------|--------------|---|
| SIMULATION 2-3 | | | |
| SPF LOAD TEST. SELECT 1-13, AND PRESS START. | | | |
| 1. MOTOR (T) | 2. MOTOR (H) | 3. MOTOR (L) | 2 |
| 4. STRBC | 5. STRC | 6. SPFC | |
| 8. SRRCB | 9. STRRC | 10. STRRBC | |
| 12. SLUM | 13. SPFFAN | | |

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped.

| | | | |
|-----------------------------|--------------|--------------|---|
| SIMULATION 2-3 | | | |
| SPF LOAD TEST. EXECUTING... | | | |
| 1. MOTOR (T) | 2. MOTOR (H) | 3. MOTOR (L) | 2 |
| 4. STRBC | 5. STRC | 6. SPFC | |
| 8. SRRCB | 9. STRRC | 10. STRRBC | |
| 12. SLUM | 13. SPFFAN | | |

3

3-2

| | |
|--------------------|---|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of sensor and detector in the finisher and the related circuit. |
| Section | Finisher |
| Item | Operation |

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The active sensors and detectors are highlighted.

| | | |
|-------|--|-----------------------------------|
| PI1 | Entry port paper detection | |
| PI1P | Punch width resist HP detection | When the punch unit is installed |
| PI1S | Paper holding plate motor clock detection | When the saddle unit is installed |
| PI2P | Punch motor clock detection | When the punch unit is installed |
| PI2S | Front door open detection | When the saddle unit is installed |
| PI3 | Paper exit detection | |
| PI3P | Punch HP detection | When the punch unit is installed |
| PI3S | Paper exit cover open detection | When the saddle unit is installed |
| PI4S | Paper folding motor clock detection | When the saddle unit is installed |
| PI5 | Shutter open detection | |
| PI5S | Alignment plate HP detection | When the saddle unit is installed |
| PI6 | Alignment guide HP detection | |
| PI6S | Saddle tray paper detection | When the saddle unit is installed |
| PI7 | Staple shift HP detection | |
| PI7S | Paper positioning plate HP detection | When the saddle unit is installed |
| PI8 | Tray 1 HP detection | |
| PI8S | Paper positioning plate HP detection | When the saddle unit is installed |
| PI9 | Tray 1 lift motor clock detection 1 | |
| PI9S | Entry port cover open detection | When the saddle unit is installed |
| PI10 | Paper exit motor clock detection | |
| PI11 | Tray 1 paper detection | |
| PI11S | Saddle paper exit detection | When the saddle unit is installed |
| PI12 | Tray 2 paper detection | |
| PI12S | Semi-circular roller phase detection | When the saddle unit is installed |
| PI13S | Guide HP detection | When the saddle unit is installed |
| PI14 | Buffer path detection | |
| PI14S | Paper holding plate lead edge position detection | When the saddle unit is installed |
| PI15 | Finisher joint detection | |
| PI15S | Paper holding plate lead edge position detection | When the saddle unit is installed |
| PI16 | Door open detection | |
| PI17 | Buffer path entry port paper detection | |
| PI17S | Vertical path paper detection | When the saddle unit is installed |
| PI18 | Oscillating guide open detection | |
| PI18S | Saddle No. 1 paper detection | When the saddle unit is installed |

| | | |
|-------|--|-----------------------------------|
| PI19 | Tray lift motor clock detection 2 | |
| PI19S | Saddle No. 2 paper detection | When the saddle unit is installed |
| PI20 | Oscillation guide clock detection | |
| PI20S | Saddle No. 3 paper detection | When the saddle unit is installed |
| PI21 | Staple lead edge detection | |
| PI21S | Paper folding HP detection | When the saddle unit is installed |
| PI22 | Staple dive HP detection | |
| PI23 | Tray 2 lift motor clock detection 1 | |
| PI24 | Tray 2 lift motor clock detection 2 | |
| PI25 | Tray 2 HP detection | |
| MS1 | Front door / Upper door open detection | |
| MS1S | Saddle entry port door detection | When the saddle unit is installed |
| MS2 | Oscillation guide close detection | |
| MS2P | Punch front door open detection | When the punch unit is installed |
| MS2S | Front door open detection | When the saddle unit is installed |
| MS3 | Safety area detection | |
| MS3S | Paper exit door open detection | When the saddle unit is installed |
| MS4 | Shutter close detection | |
| MS4S | Saddle staple presence detection 2 | When the saddle unit is installed |
| MS5S | Stitch operation HP detection 2 | When the saddle unit is installed |
| MS6S | Saddle staple presence detection 1 | When the saddle unit is installed |
| MS7 | Cartridge detection | |
| MS7S | Stitch operation HP detection 1 | When the saddle unit is installed |
| MS8 | Staple empty detection | |
| MS9 | Tray approaching detection | |

SIMULATION 3-2

FINISHER SENSOR CHECK.

PI10 PI20 PI19 PI9 PI22 **PI1** PI14 PI3
PI17 PI12 PI11 **MS8** PI21 MS7 **PI18** PI5
PI8 PI6 PI7 MS2 MS4 MS1 MS3 PI16
PI15 MS9 PI24 PI23 PI25
(PI2P) (MS2P) (PI1P) (PI3P)
<PI11S><PI15S><PI5S> <PI14S><PI1S> <PI4S> <PI13S>
<PI12S><PI17S><PI7S> <PI18S><PI6S> <PI8S><MS7S>
<MS5S><PI20S><PI19S><PI21S><MS3S><PI9S> <PI2S>
<PI3S> <MS2S><MS1S><MS6S><MS4S>

() : Added when the punch unit is installed.
< > : Added when the saddle unit is installed.

3-3

| | |
|---------------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the load in the finisher and the control circuit. |
| Section | Finisher |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press START key.
The load selected in procedure 1 is operated.
Press [CUSTOM SETTINGS] key to stop the operation of the load.

| | | |
|---|-----|--------------------|
| 1 | SL7 | Belt wait solenoid |
| 2 | SL6 | Wait solenoid |

| | | |
|----|-----|----------------------------|
| 3 | SL5 | Paddle solenoid |
| 4 | SL3 | Buffer exit port solenoid |
| 5 | SL2 | Buffer entry port solenoid |
| 6 | SL1 | Flapper solenoid |
| 7 | M10 | Tray 2 lift motor |
| 8 | M9 | Entry port transport motor |
| 9 | M8 | No. 2 transport motor |
| 10 | M7 | Oscillation motor |
| 11 | M6 | Staple motor |
| 12 | M5 | Tray 1 lift motor |
| 13 | M4 | Stapler shift motor |
| 14 | M3 | Alignment motor |
| 15 | M2 | Paper exit motor |
| 16 | M1 | No. 1 transport motor |

(When the punch unit is installed)

| | | |
|----|-----|-------------------------|
| 17 | M2P | Punch side resist motor |
| 18 | M1P | Punch motor |

(When the saddle unit is installed.)

| | | |
|----|------|---------------------------------------|
| 19 | SL4S | Transport plate contact solenoid |
| 20 | SL2S | No. 2 paper deflection plate solenoid |
| 21 | SL1S | No. 1 paper deflection plate solenoid |
| 22 | M8S | Paper holding motor |
| 23 | M7S | Stitch motor: Front |
| 24 | M6S | Stitch motor: Rear |
| 25 | M5S | Saddle alignment motor |
| 26 | M4S | Paper positioning motor |
| 27 | M3S | Guide motor |
| 28 | M2S | Paper folding motor |
| 29 | M1S | Saddle transport motor |

SIMULATION 3-3

FINISHER LOAD TEST. SELECT 1- , AND PRESS START.

2

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped.

SIMULATION 3-3

FINISHER LOAD TEST. EXECUTING...

2

3-10

| | |
|---------------------------|------------------------------|
| Purpose | Adjustment |
| Function (Purpose) | Finisher (AR-F16) adjustment |
| Section | Finisher |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press [START] key.
- 3) Enter the adjustment value with 10-key.
- 4) Press [START] key. (The entered value is stored.)

| Item | | Set range |
|------|---|---------------------------|
| 1 | Saddle stitch/folding position adjustment | 192 - 208, 1STEP: 0.25 mm |
| 2 | Alignment position adjustment | 2 - 18, 1STEP: 0.35 mm |
| 3 | Staple binding position adjustment | 68 - 132, 1STEP: 0.152 mm |
| 4 | Punch center adjustment | 37 - 63, 1STEP: 0.15mm |

| | Item | Set range |
|---|--|------------------------|
| 5 | Punch hole position adjustment (Paper feed direction) | 35 - 57, 1STEP: 0.26mm |
| 6 | Stack tray standby position adjustment (Small size) | 5 - 35, 1STEP: 1mm |
| 7 | Stack tray standby position adjustment (Large size) | 5 - 35, 1STEP: 1mm |

SIMULATION 3-10
FINISHER SETTING. SELECT 1-7, AND PRESS START.
1. SADDLE POSITION
2. ALIGNMENT POSITION
3. STAPLE POSITION
4. PUNCH CENTER
5. PUNCH HOLE
6. TRAY WAITING POSITION(S-SIZE)
7. TRAY WAITING POSITION(L-SIZE)

1

Press [START] key, and the operation
is started.

Press [CUSTOM SETTINGS] key, and the
operation is stopped.

SIMULATION 3-10
CONSOLE FINISHER SETTING. INPUT VALUE, AND PRESS START.
1. SADDLE POSITION

200

3-30

| | |
|---------------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the sensors and detectors in the inserter. |
| Section | Inserter |
| Item | |

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.
The active sensors and detectors are highlighted.

| | |
|---------|---|
| TH_SEN | Sub tray pull-out detection |
| TS_SEN | Sub tray storage detection |
| T_SEN | Inserter tray paper size detection |
| EMP_SEN | Inserter tray empty detection |
| REG_SEN | Inserter resist sensor |
| TIM_SEN | Inserter timing sensor detection |
| JCK_SEN | Inserter cover open/close sensor |
| H_SEN | Inserter reverse sensor |
| HI_SEN | Inserter paper exit sensor |
| HYK_SEN | Inserter reverse unit open/close sensor |
| S_SW | Inserter set SW |
| KC_SEN | Base cover open/close sensor |
| P_ST_SW | Inserter start SW |
| P_MO_SW | Inserter staple mode select SW |
| P_PN_SW | Inserter punch select SW |

SIMULATION 3-20
INSERTER SENSOR CHECK.
TH_SEN TS_SEN T_SEN EMP_SEN
REG_SEN TIM_SEN JCK_SEN IL_SEN
HI_SEN HYK_SEN S_SW KC_SEN
P_ST_SW P_MO_SW P_PN_SW

3-31

| | |
|---------------------------|---|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the loads in the inserter and the related circuits. |
| Section | Inserter |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
 - 2) Press [START] key.
- The load selected in procedure 1 is operated.

Press [CUSTOM SETTINGS] key to stop the operation of the load.

| | | |
|---|-------|------------------------------------|
| 1 | K_MOT | Reverse motor |
| 2 | Y_MOT | Horizontal transport motor |
| 3 | H_MOT | Inserter reverse |
| 4 | F_SOL | Inserter flapper solenoid |
| 5 | R_CL | Inserter resist clutch |
| 6 | P_LED | Inserter operation panel upper LED |

SIMULATION 3-31
INSERTER LOAD TEST. SELECT 1-6, AND PRESS START.
1. K_MOT 2. Y_MOT 3. H_MOT
4. F_SOL 5. R_CL 6. P_LED

2

Press [START] key, and the operation
is started.

Press [CUSTOM SETTINGS] key, and the
operation is stopped.

SIMULATION 3-31
INSERTER LOAD TEST. EXECUTING....
2. Y_MOT

2

3-32

| | |
|---------------------------|---|
| Purpose | Setting (Adjustment) |
| Function (Purpose) | Inserter paper width detection level setting. |
| Section | Inserter |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the adjustment item with 10-key.
- 2) Press [START] key.
- 3) Enter the setting (adjustment) value with 10-key.
- 4) Press [START] key.

| | | |
|---|---------------|--------------------|
| 1 | MAX. POSITION | Max. position |
| 2 | POSITION 1 | Adjustment point 1 |
| 3 | POSITION 2 | Adjustment point 2 |
| 4 | MIN. POSITION | Min. width |

SIMULATION 3-32
INSERTER TRAY VALUE SETTING. SELECT 1-4, AND PRESS START.
1. MAX. POSITION : 72
2. POSITION 1 : 380
3. POSITION 2 : 710
4. MIN. POSITION : 804

1

Press [START] key.

Press [CUSTOM SETTINGS] key.

SIMULATION 3-32
INSERTER TRAY VALUE SETTING. INPUT VALUE 0-9999, AND PRESS START.
1. MAX. POSITION

72

4

| | |
|--------------------|--|
| 4-2 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the sensors and detectors in the paper feed section (large capacity tray) and the related circuit. |
| Section | Paper feed |
| Item | Operation |

Operation/Procedure
The operating conditions of the sensors and detectors are displayed.
The active sensors and detectors are highlighted.

<LCC>

| | |
|-------|---------------------------------------|
| LTD | Transport sensor |
| LUD | Tray upper limit sensor |
| LLD | Tray lower limit sensor |
| LPED | Tray paper presence/empty sensor |
| LTOD | Main unit connection detection sensor |
| LCD | Tray insertion detection |
| LOSW | Upper open/close detection SW |
| LRE | Lift motor encoder sensor |
| +24VM | 24V power monitor |
| LLSW | Upper limit SW |

| | | | |
|-------------------|------|-----|-------|
| SIMULATION 4-2 | | | |
| LCC SENSOR CHECK. | | | |
| LTD | LUD | LLD | LPED |
| LCD | LOSW | LRE | +24VM |
| LLSW | | | |

| | |
|--------------------|--|
| 4-3 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the loads in the paper feed section (large capacity tray) and the related circuit. |
| Section | Paper feed |
| Item | Operation |

Operation/Procedure
1. Select the number corresponding to the target of operation check with 10-key.
2. Press [START] key.
The load selected in procedure 1 is operated.
Press [CUSTOM SETTINGS] key to stop the operation of the load.

<Side LCC>

| | | |
|---|-------|-----------------------|
| 1 | LTM | LCC transport motor |
| 2 | LLM | LCC lift motor |
| 3 | LPFCL | Paper feed clutch |
| 4 | LPSL | LCC paper feed clutch |
| 5 | LTCL | LCC transport clutch |
| 6 | LTLSL | Tray lock solenoid D |

| | |
|---|----------|
| SIMULATION 4-3 | |
| LCC LOAD TEST. SELECT 1-6, AND PRESS START. | |
| 1. LTM | 2. LLM |
| 3. LPFCL | 4. LPSL |
| 5. LTCL | 6. LTLSL |

Press [START] key, and the operation is started.

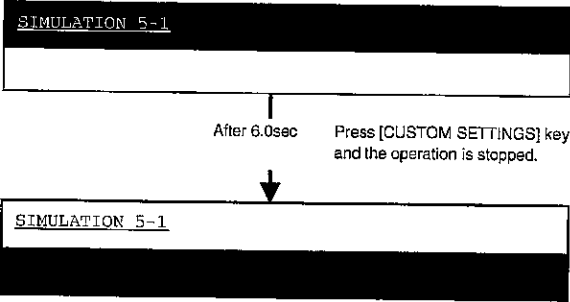
Press [CUSTOM SETTINGS] key, and the operation is stopped.

| | |
|------------------------------|----------|
| SIMULATION 4-3 | |
| LCC LOAD TEST. EXECUTING.... | |
| 1. LTM | 2. LLM |
| 3. LPFCL | 4. LPSL |
| 5. LTCL | 6. LTLSL |

5

| | |
|--------------------|--|
| 5-1 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the display, LCD in the operation panel, and control circuit. |
| Section | Operation (Display/Operation key) |
| Item | Operation |

Operation/Procedure
The LCD is changed as shown below. (The contrast changes every 2sec from the current level to MAX → MIN → the current level. During this period, each LED is lighted.



| | |
|--------------------|---|
| 5-2 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the heater lamp and the control circuit. |
| Section | Fixing (Fusing) |
| Item | Operation |

Operation/Procedure
1) Select the number corresponding to the target of operation check with 10-key.
2) Press [START] key.
The load selected in procedure 1 performs ON/OFF operation.
Press [CUSTOM SETTINGS] key to stop the operation of the load.
The ON/OFF operation of the selected heater lamp is repeated every 500ms five times.

| | | |
|---|-------------|-----------------------|
| 1 | HL1 (LOWER) | Heater lamp 1 (Lower) |
| 2 | HL2 (UPPER) | Heater lamp 2 (Upper) |
| 3 | HL3 (LEFT) | Heater lamp 3 (Left) |

| | |
|--|--|
| SIMULATION 5-2 | |
| HEATER LAMP TEST. SELECT 1-3 ,AND PRESS START. | |
| 1. HL1 (LOWER) | |
| 2. HL2 (UPPER) | |
| 3. HL3 (LEFT) | |

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped.
The operation is repeated the specified number of times before stopping.

| | |
|---------------------------------|--|
| SIMULATION 5-2 | |
| HEATER LAMP TEST. EXECUTING.... | |
| 1. HL1 (LOWER) | |
| 2. HL2 (UPPER) | |
| 3. HL3 (LEFT) | |

| | |
|--------------------|--|
| 5-3 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the scanner lamp and the control circuit. |
| Section | Optical (Image scanning) |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
 - 2) Press [START] key.
The load selected in procedure 1 turns ON for 10sec.
Press [CUSTOM SETTINGS] key to stop the operation.
The copy lamp or CIS is turned on for 10sec and turned off.
- NOTE: CIS: only when the DSPF is installed.

SIMULATION 5-3
COPY LAMP TEST. SELECT 1, 2, AND PRESS [START].
1. COPY LAMP
2. CIS

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped after 10sec.

SIMULATION 5-3
COPY LAMP TEST. EXECUTING....
1. COPY LAMP
2. CIS

| | |
|--------------------|--|
| 5-4 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the discharge lamp and the related circuit. |
| Section | Process |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press [START] key.
The load selected in procedure 1 turns ON for 30sec.
Press [CUSTOM SETTINGS] key to stop the operation.

SIMULATION 5-4
DISCHARGE LAMP CHECK. SELECT 1, AND PRESS [START].
1. DL

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped after 30sec.

SIMULATION 5-4
DISCHARGE LAMP CHECK. SELECT 1, AND PRESS [START].
1. DL

| | |
|--------------------|--|
| 6 | |
| 6-1 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the paper transport system loads and the control circuit. |
| Section | Paper transport (Discharge/Switchback/Transport) |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press [START] key.
The load selected in procedure 1 operates.
Press [CUSTOM SETTINGS] key to stop the operation.

| | | |
|----|---------|---|
| 1 | MSWPR | MSW reset signal |
| 2 | HLP | Heater power relay signal |
| 3 | DCPR | DC power relay signal |
| 4 | MM | Main motor |
| 5 | DM | Drum motor |
| 6 | DVM | Developing motor |
| 7 | TURM | Transfer separation motor |
| 8 | TRM | PS front motor |
| 9 | POM1 | Paper exit motor 1 |
| 10 | POM2_FW | Paper exit motor 2 forward rotation |
| 11 | POM2_RV | Paper exit motor 2 reverse rotation |
| 12 | VPM | Paper transport motor |
| 13 | RRC | Resist roller clutch signal |
| 14 | PSBC | Brake clutch signal |
| 15 | PSPS | Separation pawl |
| 16 | T1PFC | Tray 1 paper feed clutch |
| 17 | T2PFC | Tray 2 paper feed clutch |
| 18 | HPFC | Horizontal transport clutch |
| 19 | T1PUS | Tray 1 pickup solenoid |
| 20 | T2PUS | Tray 2 pickup solenoid |
| 21 | HPLS | Relay path clock solenoid |
| 22 | T1LUM | Tray 1 lift-up motor |
| 23 | T2LUM | Tray 2 lift-up motor |
| 24 | DSKPFC1 | Desk paper transport clutch upstream side |
| 25 | DSKPFC2 | Desk paper transport clutch downstream side |
| 26 | M1PFC | Tray 3 paper feed clutch |
| 27 | M2PFC | Tray 4 paper feed clutch |
| 28 | M1PUS | Tray 3 pickup solenoid |
| 29 | M2PUS | Tray 4 pickup solenoid |
| 30 | M1LUM | Tray 3 lift-up motor |
| 31 | M2LUM | Tray 4 lift-up motor |
| 32 | TRC_LCC | Desk clutch sync signal |
| 33 | FUM | Fusing motor |
| 34 | MPFUS | Manual pickup solenoid |
| 35 | MPFC | Manual paper feed clutch signal |
| 36 | MPFGS | Manual gate solenoid |

SIMULATION 6-1
FEED OUTPUT CHECK. SELECT 1- 33, AND PRESS START.
1.MSWPR 2.HLPR 3.DCPR 4.MM 5.DM
6.DVM 7.TURM 8.TRM 9.POM1
10.POM2_FW 11.POM2_RV 12.VPM
13.RRC 14.PSBC 15.PSPS 16.T1PFC
17.T2PFC 18.HPFC 19.T1PUS 20.T2PUS
21.HPLS 22.T1LUM 23.T2LUM 24.DSKPFC1
25.DSKPFC2 26.M1PFC 27.M2PFC 28.M1PUS
29.M2PUS 30.M1LUM 31.M2LUM 32.TRC_LCC
33.FUM 34.MPPFUS 35.MPFC 36.MPFGS

2

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped immediately or after repeating the operation several times.

SIMULATION 6-1
FEED OUTPUT CHECK. EXECUTING...
1.MSWPR 2.HLPR 3.DCPR 4.MM 5.DM
6.DVM 7.TURM 8.TRM 9.POM1
10.POM2_FW 11.POM2_RV 12.VPM
13.RRC 14.PSBC 15.PSPS 16.T1PFC
17.T2PFC 18.HFC 19.T1PUS 20.T2PUS
21.HPLS 22.T1LUM 23.T2LUM 24.DSKPFC1
25.DSKPFC2 26.M1PFC 27.M2PFC 28.M1PUS
29.M2PUS 30.M1LUM 31.M2LUM 32.TRC_LCC
33.FUM 34.MPPFUS 35.MPFC 36.MPFGS

2

6-2

| | |
|--------------------|---|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of each fan motor and its control circuit. |
| Section | Other |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
- 2) Press [START] key.
The load selected in procedure 1 operates.
Press [CUSTOM SETTINGS] key to stop the operation.

| | | | |
|---|---|--------------|---|
| ▲ | 1 | VFM-EX | Exhaust fan motor (VFM-EX1, 2, 3, VFM-BKL, VFM-BKU) |
| ▲ | 2 | CFM-UP | Heat exhaust fan motor (Paper exit upper) (CFM-U1, 2, 3, VFM-BKR) |
| ▲ | 3 | CFM-R | Cooling fan motor (Right side) (CFM-R1, 2, 3) |
| ▲ | 4 | CFM-DC | Cooling fan motor (Power source) (CFM-DC1, 2) |
| ▲ | 5 | CFM-DV | Cooling fan motor (Developing) (CFM-DV) |
| ▲ | 6 | CFM-ICU /HDD | Cooling fan motor (Controller/HDD) (CFM-ICU/HDD) |
| ▲ | 7 | ALL | All fans control* |
| ▲ | 8 | CFM-AD | Cooling fan motor (paper exit center) (CFM-U4) |

* All fans: All the fans controlled by the engine.

▲ (Exhaust fan motor, heat exhaust fan motor (paper exit upper), cooling fan motor (right side) cooling fan motor (power source), cooling fan motor (developing), cooling fan motor (paper exit center))

SIMULATION 6-2
FAN MOTOR CHECK. SELECT 1-8, CAND PRESS START.
1. VFM-EX 2. CFM-UP
3. CFM-R 4. CFM-DC
5. CFM-DV 6. CFM-ICU /HDD
7. ALL 8. CFM-AD

2

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped.

SIMULATION 6-2
FAN MOTOR CHECK. .
2. CFM-UP

2

6-3

| | |
|--------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the transfer unit and the related circuit. |
| Section | Process (Transfer) |
| Item | |

Operation/Procedure

- 1) Select the number corresponding to the target of operation check with 10-key.
 - 2) Press [START] key.
The transfer belt performs contact/separation with the OPC drum.
Press [CUSTOM SETTINGS] key to stop the operation.
- NOTE: Before disassembling the transfer unit, use this simulation to separate the transfer unit from the OPC drum.

| | | |
|---|----------------|--------------------------------|
| 1 | TURM (RELEASE) | Transfer unit separation state |
| 2 | TURM (JOINT) | Transfer unit contact state |

SIMULATION 6-3
TURM CHECK. SELECT 1-2 CAND PRESS START.
1. TURM (RELEASE)
2. TURM (JOINT)

2

Press [START] key, and the operation is started.

Press [CUSTOM SETTINGS] key, and the operation is stopped immediately or after repeating the operation several times.

SIMULATION 6-3
TURM CHECK. EXECUTING...
1. TURM (RELEASE)

2

After completion

Press [CUSTOM SETTINGS] key to stop the operation.

SIMULATION 6-3
TURM CHECK. COMPLETE...
1. TURM (RELEASE)

2

7

7-1

| | |
|--------------------|--|
| Purpose | Setting |
| Function (Purpose) | Used to set the operating conditions of aging. |
| Section | |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the operating condition of aging with 10-key.
- The combined mode of 0 - 6 mode and 10, 20, or 30 mode can be set.
- In that case, the number corresponding to one of 0 - 6 mode and the number corresponding to one of 10, 10, and 30 mode are added and the sum number is entered.
- 2) Press [START] key.
- The condition selected in procedure 1) is set.
- The setting of this simulation is kept valid until the power is turned off.

| | | |
|-----|--|---|
| 0 | NO MISS FEED DETECTION | No jam detection |
| 1 | AGING | Aging mode |
| 2 | AGING/NO MISS FEED DETECTION. | No jam detection, aging mode |
| 3 | AGING/NO MISS FEED DETECTION/NO WARM UP/ NO TEMPERATURE CONTROL. | No jam detection/ no warm-up/ no fusing temperature control, aging mode |
| 4 | NO WARM UP. | No warm-up |
| 5 | AGING/INTERVAL. | Intermittent aging mode |
| 6 | AGING/INTERVAL/NO MISS FEED DETECTION. | No jam detection intermittent aging mode |
| +10 | NO PROCESS UNIT CHECK. | Above +10: No process unit (including the developing unit) detection |
| +20 | NO SHADING. | Above +20: No shading |
| +30 | NO PROCESS UNIT CHECK/ NO SHADING. | Above +30: No process unit detection /no shading |

SIMULATION 7-1
AGING TEST SETTING. SELECT 0-36, AND PRESS START.
0.NO MISS FEED DETECTION
1.AGING
2.AGING/NO MISS FEED DETECTION.
3.AGING/NO MISS FEED DETECTION/
NO WARM UP/NO TEMPERATURE CONTROL.
4.NO WARM UP.
5.AGING/INTERVAL.
6.AGING/INTERVAL/NO MISS FEED DETECTION.
+10:NO PROCESS UNIT CHECK.
+20:NO SHADING.
+30:NO PROCESS UNIT CHECK/NO SHADING.

Press [START] key to start registration and operation.
The operation mode is kept until the power is turned off or setting is made again.

7-6

| | |
|--------------------|---|
| Purpose | Setting |
| Function (Purpose) | Used to set the intermittent aging cycle. |
| Section | |
| Item | Operation |

Operation/Procedure

- 1) Enter the intermittent aging cycle (unit: sec) with 10-key.
- 2) Press [START] key.
- The time entered in procedure 1) is set.
- * Set range of interval time: 1 - 999 (sec)

Set the intermittent aging mode cycle of 7-1 with 10-key. (Unit: sec)

SIMULATION 7-6
INTERVAL AGING CYCLE SETUP. INPUT TIME AND PRESS START.
(1-999, UNIT: sec)

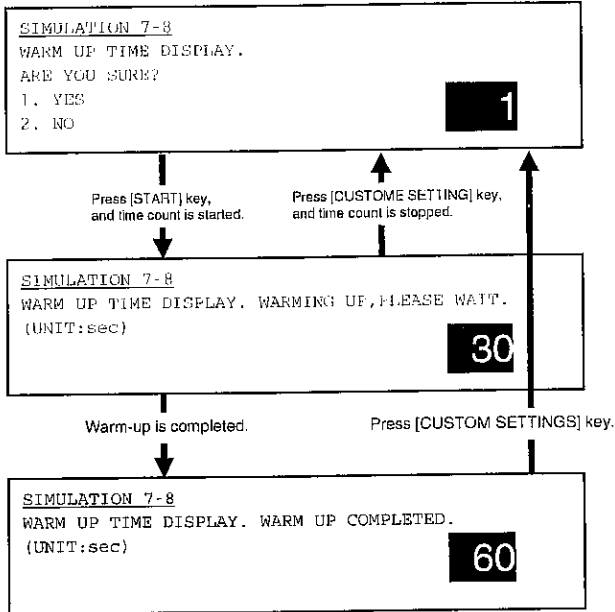
10

7-8

| | |
|--------------------|--|
| Purpose | Setting |
| Function (Purpose) | Used to set the warm-up time display YES/NO. |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the warm-up time display YES/NO.
- 2) Press [START] key, and the number selected in procedure 1) is set.
- * The setting of this simulation is kept valid until the power is turned off.
- The warm-up time is displayed in the unit of second.



8

8-1

| | |
|--------------------|--|
| Purpose | Adjustment/Operation test/Check |
| Function (Purpose) | Used to check and adjust the operations of the developing voltage of each color and the control circuit. |
| Section | Image process (Photoconductor/Developing/Transfer/ Cleaning) |

Operation/Procedure

- 1) Enter the number corresponding to the adjustment item with 10-key.
- 2) Press [START] key.
- 3) Enter the adjustment value with 10-key.
- 4) Press [START] key.
- (The set value is stored, and the output corresponding to the set value is outputted for 30sec.)
- Press [CUSTOM SETTINGS] key to stop the operation.
- (The developing bias output voltage adjustment and output check can be made in each print mode.)

| Item | | | Set range | Default |
|------|-----------|---------------------------------|-----------|---------|
| 1 | AUTO | Auto mode | 0 - 750 | 495 |
| 2 | CHARACTER | Text mode | | |
| 3 | MIX | Text/Photo mode | | |
| 4 | PHOTO | Photo mode | | |
| 5 | PRINTER | Printer mode | | |
| 6 | FAX | FAX mode | 0 - 250 | 150 |
| 7 | PLUS | Reverse developing bias voltage | | |

| | | | | |
|---|-----|-------------|-----|---|
| SIMULATION 8-1 | | | | |
| DV BIAS SETTING. SELECT 1-7, AND PRESS START. | | | | |
| 1.AUTO | 495 | 2.CHARACTER | 495 | 1 |
| 3.MIX | 495 | 4.PHOTO | 495 | |
| 5.PRINTER | 495 | 6.FAX | 495 | |
| 7.PLUS | 150 | | | |
| | | | | |

Press [START] key. Press [CUSTOM SETTINGS] key.

| | | | | |
|--|-----|--|--|--|
| SIMULATION 8-1 | | | | |
| DV BIAS SETTING. INPUT VALUE, AND PRESS START. | | | | |
| 1:AUTO (0-750) | 495 | | | |

Press [START] key. Press [CUSTOM SETTINGS] key.
Or after 30sec output.

| | | | | |
|-------------------------------|-----|--|--|--|
| SIMULATION 8-1 | | | | |
| DV BIAS SETTING. EXECUTING... | | | | |
| 1:AUTO | 495 | | | |

8-2

| | |
|--------------------|---|
| Purpose | Adjustment/Operation test/Check |
| Function (Purpose) | Used to check and adjust the operation of the main charger grid voltage in each printer mode and the control circuit. |
| Section | Image process (Photoconductor/Developing/Transfer/Cleaning)/Transfer |

Operation/Procedure

- 1) Enter the number corresponding to the adjustment item with 10-key.
 - 2) Press [START] key.
 - 3) Enter the adjustment value with 10-key.
 - 4) Press [START] key.
- (The set value is stored, and the output corresponding to the set value is outputted for 30sec.)

Press [CUSTOM SETTINGS] key to stop the operation.
(The main charger grid output voltage adjustment and output check can be made in each print mode.)

| Item | | | Set range | Default |
|------|-----------|-----------------|------------|---------|
| 1 | AUTO | Auto mode | 200 - 1000 | 580 |
| 2 | CHARACTER | Text mode | | |
| 3 | MIX | Text/Photo mode | | |
| 4 | PHOTO | Photo mode | | |
| 5 | PRINTER | Printer mode | | |
| 6 | FAX | FAX mode | | |

| | | | | |
|---|-----|-------------|-----|---|
| SIMULATION 8-2 | | | | |
| MAIN GRID SETTING. SELECT 1-6, AND PRESS START. | | | | |
| 1.AUTO | 580 | 2.CHARACTER | 580 | 1 |
| 3.MIX | 580 | 4.PHOTO | 580 | |
| 5.PRINTER | 580 | 6.FAX | 580 | |
| | | | | |
| | | | | |

Press [START] key. Press [CUSTOM SETTINGS] key.

| | | | | |
|--|-----|--|--|--|
| SIMULATION 8-2 | | | | |
| MAIN GRID SETTING. INPUT VALUE, AND PRESS START. | | | | |
| 1:AUTO (200-1000) | 580 | | | |

Press [START] key. Press [CUSTOM SETTINGS] key.
Or after 30sec output.

| | | | | |
|---------------------------------|-----|--|--|--|
| SIMULATION 8-2 | | | | |
| MAIN GRID SETTING. EXECUTING... | | | | |
| 1:AUTO | 580 | | | |

| | |
|--------------------|---|
| 8-6 | |
| Purpose | Adjustment/Operation test/Check |
| Function (Purpose) | Used to check and adjust the operation of the transfer voltage and the control circuit. |
| Section | Image process (Photoconductor/Developing/Transfer/Cleaning)/Transfer |

Operation/Procedure

- 1) Enter the number corresponding to the adjustment item with 10-key.
 - 2) Press [START] key.
 - 3) Enter the adjustment value with 10-key.
 - 4) Press [START] key.
- (The set value is stored, and the voltage corresponding to the set value is outputted for 30sec.)

Press [CUSTOM SETTINGS] key to stop the operation.
(The transfer output voltage adjustment and output check can be made in each print mode.)

| Item | | | Set range | Default | |
|------|-------|----------------------|-----------|--------------------------|------------|
| | | | | AR-M550N/U, AR-620N/U | AR-M700N/U |
| 1 | FRONT | Long side print mode | 0 - 800 | 300 | 400 |
| 2 | BACK | Back side print mode | | 300 | 400 |

| | | | | |
|--|-----|--------|-----|---|
| SIMULATION 8-6 | | | | |
| THV+ SETTING. SELECT 1-2, AND PRESS START. | | | | |
| 1.FRONT | 300 | 2.BACK | 300 | 1 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Press [START] key. Press [CUSTOM SETTINGS] key.

| | | | | |
|---|-----|--|--|--|
| SIMULATION 8-6 | | | | |
| THV+ SETTING. INPUT VALUE, AND PRESS START. | | | | |
| 1.FRONT (0-800) | 300 | | | |

Press [START] key. Press [CUSTOM SETTINGS] key.
Or after 30sec output.

| | | | | |
|----------------------------|-----|--|--|--|
| SIMULATION 8-6 | | | | |
| THV+ SETTING. EXECUTING... | | | | |
| 1.FRONT | 300 | | | |

| | |
|--------------------|---|
| 8-17 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check and adjust the operation of the transfer voltage and the related circuit. (Transfer belt cleaning mode) |
| Section | Image process (Photoconductor/Developing/Transfer/Cleaning) |
| Item | Operation |

Operation/Procedure

- 1) Enter the number corresponding to the adjustment item with 10-key.
- 2) Press [START] key.
- 3) Enter the adjustment value with 10-key.
- 4) Press [START] key.

(The set value is stored, and the voltage corresponding to the set value is outputted for 30sec.)

Press [CUSTOM SETTINGS] key to stop the operation.

(The transfer output voltage adjustment and output check can be made in the transfer belt cleaning mode.)

| | Item | | Set range | Default |
|---|-----------|--------------|-----------|---------|
| 1 | SHF FRONT | AC component | 0 - 450 | 450 |
| 2 | SHV BACK | AC component | 0 - 450 | 450 |
| 3 | THV- | DC component | 0 - 150 | 10 |

SIMULATION 8-17
TRANSFER ROLLER SETTING. SELECT 1-3, AND PRESS START.
1. SHV FRONT 450
2. SHV BACK 450
3. THV- 10

Press [START] key. Press [CUSTOM SETTINGS] key.

SIMULATION 8-17
TRANSFER ROLLER SETTING. INPUT VALUE, AND PRESS START.
1. FRONT (0-600)

Press [START] key. Press [CUSTOM SETTINGS] key. Or after 30sec output.

SIMULATION 8-17
TRANSFER ROLLER SETTING. EXECUTING...
1. FRONT (0-600)

| | |
|--------------------|--|
| 8-18 | |
| Purpose | Adjustment/Operation test/Check |
| Function (Purpose) | Used to check and adjust the voltage of the transfer CL roller cleaning/transfer CL roller print mode and the control circuit. |
| Section | Image process (Photoconductor/Developing/Transfer/Cleaning) |

Operation/Procedure

- 1) Select the number corresponding to the adjustment item with 10-key.
- 2) Press [START] key.
- 3) Enter the adjustment value with 10-key.
- 4) Press [START] key.

(The set value is saved in the memory and the voltage corresponding to the set value is outputted for 30sec.)

Press [CUSTOM SETTINGS] key to stop the operation.

▲ (The output voltage of the transfer CL roller cleaning/transfer CL roller print mode can be adjusted and checked.)

| Item | | Set range | Default |
|-------------------------------|------------|-----------|---------|
| Transfer CL roller (Print) | CRHV PLUS | 0 - 250 | 200 |
| Transfer CL roller (Cleaning) | CRHV MINUS | 0 - 250 | 200 |

SIMULATION 8-18
TRANSFER CLEANING ROLLER SETTING. SELECT 1-2, AND PRESS START.
1. CRHV PLUS 200
2. CRHV MINUS 200

Press [START] key. Press [CUSTOM SETTINGS] key.

SIMULATION 8-18
TRANSFER CLEANING ROLLER SETTING. INPUT VALUE, AND PRESS START.
1. CRHV PLUS (0-250)

Press [START] key. Press [CUSTOM SETTINGS] key. Or after 30sec output.

SIMULATION 8-18
TRANSFER CLEANING ROLLER SETTING. EXECUTING...
1. CRHV PLUS (0-250)

| | |
|--------------------|--|
| 8-19 | |
| Purpose | Adjustment/Operation test/Check |
| Function (Purpose) | Used to check and adjust the fusing bias voltage and the control circuit. (Not used) |
| Section | Fusing |

Operation/Procedure (Not used)

- 1) Select the number corresponding to the adjustment item with 10-key.
 - 2) Press [START] key.
- (The voltage is outputted for 30sec.)

When [CUSTOM SETTINGS] key is pressed, the operation can be stopped.

The output voltage can be adjusted with the adjustment volumes VR101/VR102 on the high voltage PWB (fusing bias).

| Item | | Adjustment VR |
|-----------------|-------|---------------|
| Fusing bias (-) | FBIAS | VR 101 |
| Fusing bias (+) | | VR 102 |

SIMULATION 8-19
FUSING BIAS CHECK. SELECT 1, AND PRESS START.
1. FBIAS

Press [START] key. Press [CUSTOM SETTINGS] key. Or after 30sec output.

SIMULATION 8-19
FUSING BIAS CHECK.. EXECUTING...
1. FBIAS

9

| | |
|--------------------|---|
| 9-1 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check and adjust the operation of the load (clutch/solenoid) in the duplex section and the control circuit. |
| Section | Duplex |
| Item | Operation |

Operation/Procedure

1) Select the number corresponding to the target of the operation check with 10-key.

2) Press [START] key.

The load selected in procedure 1) is operated.

Press [CUSTOM SETTINGS] key to stop the operation.

| | | |
|---|-------|-------------------------|
| 1 | ADUM1 | ADU motor 1: Upstream |
| 2 | ADUM2 | ADU motor 2: Downstream |
| 3 | DGS | ADU gate solenoid |

SIMULATION 9-1
ADU OUTPUT CHECK. SELECT 1-3, AND PRESS START.
1. ADUM1
2. ADUM2
3. DGS

Press [START] key.

Press [CUSTOM SETTINGS] key to stop the operations.

SIMULATION 9-1
ADU OUTPUT CHECK. EXECUTING-
1. ADUM1
2. ADUM2
3. DGS

| | |
|--------------------|--|
| 9-2 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the sensors and detectors in the duplex section and its control circuit. |
| Section | Duplex |
| Item | Operation |

Operation/Procedure

The operating conditions of the sensors and detectors are displayed.

The active sensors and detectors are highlighted.

| | |
|---------|----------------------------------|
| DSW_ADU | ADU cabinet open/close detection |
| AINPD | ADU paper entry detection |
| APPD1 | ADU transport detection 1 |
| APPD2 | ADU transport detection 2 |

SIMULATION 9-2
ADU SENSOR CHECK.
DSW_ADU AINPD APPD1 APPD2

10

| | |
|--------------------|--|
| 10-1 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the toner motor and the related circuit. |
| Section | Process (Developing) |
| Item | Operation |

Operation/Procedure

1) Select the number corresponding to the target of the operation check with 10-key.

2) Press [START] key.

The load selected in procedure 1) is operated for 10sec.

Press [CUSTOM SETTINGS] key to stop the operation.

NOTE: Do not execute this simulation with toner in the toner bottle and the intermediate toner tank. Excessive toner may enter the developing section, causing overtoner. Check that there is no toner in the toner bottle and the intermediate toner tank or disassemble the toner motor before executing this simulation.

| | |
|-----|---------------|
| TM1 | Toner motor 1 |
| TM2 | Toner motor 2 |

SIMULATION 10-1
TONER MOTOR ACTIVATION. SELECT 1-2, AND PRESS START
1. TM1
2. TM2

Press [START] key.

Press [CUSTOM SETTINGS] key to stop the operations. Or after 10sec.

SIMULATION 10-1
TONER MOTOR ACTIVATION. EXECUTING...
1. TM1
2. TM2

| | |
|--------------------|--|
| 10-2 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the toner remaining quantity sensor and the related circuit. |
| Section | Process (Developing) |
| Item | Operation |

Operation/Procedure

1) Press [START] key.

The toner motor rotates 2 turns, and the toner presence/empty in the toner hopper is displayed.

Toner empty: Normal display

Toner remained: Highlighted display

SIMULATION 10-2
TONER REST SENSOR CHECK. PRESS START.
TFSD

Press [START] key.

Press [CUSTOM SETTINGS] key to stop the operation immediately, or after **

SIMULATION 10-2
TONER REST SENSOR CHECK. EXECUTING...
TFSD

13

13-0

| | |
|---------------------------|--|
| Purpose | Clear/Cancel (Trouble etc.) |
| Function (Purpose) | Used to cancel the self-diag "U1" trouble. (Only when FAX is installed.) |
| Section | FAX |
| Item | Trouble |

Operation/Procedure

- 1) Select 1 (YES) with 10-key.
- 2) Press [START] key. (The trouble display is canceled.)

| | | |
|---|-----|--|
| 1 | YES | After canceling U1 trouble, the machine returns to the main code entry standby mode. |
| 2 | NO | Without canceling U1 trouble, the machine returns to the main code entry standby mode. |

SIMULATION 13
U1 TROUBLE CANCELLATION.
ARE YOU SURE?
1. YES
2. NO

1

14

14-0

| | |
|---------------------------|---|
| Purpose | Clear/Cancel (Trouble etc.) |
| Function (Purpose) | Used to cancel excluding the self-diag U1/LCC/U2/PF troubles. |
| Item | Trouble Error |

Operation/Procedure

- 1) Select 1 (YES) with 10-key.
- 2) Press [START] key. (The trouble display is canceled.)

| | | |
|---|-----|--|
| 1 | YES | After canceling the trouble other than U1, U2, PF, and LCC, the machine returns to the main code entry standby mode. |
| 2 | NO | Without canceling the trouble, the machine returns to the main code entry standby mode. |

SIMULATION 14
TROUBLE CANCELLATION. (OTHERS)
ARE YOU SURE?
1. YES
2. NO

1

15

15-0

| | |
|---------------------------|---|
| Purpose | Clear/Cancel (Trouble etc.) |
| Function (Purpose) | Used to cancel the self-diag "U6-09, F3-12, 22" (large capacity paper feed tray, paper feed trays 1, 2) troubles. |
| Section | LCC |
| Item | Trouble |

Operation/Procedure

- 1) Select 1 (YES) with 10-key.
- 2) Press [START] key. (The trouble display is canceled.)

| | | |
|---|-----|---|
| 1 | YES | After canceling the LCC trouble, the machine returns to the main code entry standby mode. |
| 2 | NO | Without canceling the trouble, the machine returns to the main code entry standby mode. |

SIMULATION 15
LCC TROUBLE CANCELLATION.
ARE YOU SURE?
1. YES
2. NO

1

16

16-0

| | |
|---------------------------|---|
| Purpose | Clear/Cancel (Trouble etc.) |
| Function (Purpose) | Used to cancel the self-diag U2 troubles. |
| Section | MFP control PWB, PCU PWB, scanner control PWB |
| Item | Trouble |

Operation/Procedure

- 1) Select 1 (YES) with 10-key.
- 2) Press [START] key. (The trouble display is canceled.)

| | | |
|---|-----|--|
| 1 | YES | After canceling the U2 trouble, the machine returns to the main code entry standby mode. |
| 2 | NO | Without canceling the trouble, the machine returns to the main code entry standby mode. |

SIMULATION 16
U2 TROUBLE CANCELLATION.
ARE YOU SURE?
1. YES
2. NO

1

17

17-0

| | |
|---------------------------|--|
| Purpose | Clear/Cancel (Trouble etc.) |
| Function (Purpose) | Used to cancel the PF troubles (when the copy inhibit command from the host computer is received). |
| Section | Communication unit (TEL/LIU/MODEM etc.) |
| Item | Trouble Error |

Operation/Procedure

- 1) Select 1 (YES) with 10-key.
- 2) Press [START] key. (The trouble display is canceled.)

| | | |
|---|-----|--|
| 1 | YES | After canceling the PF trouble, the machine returns to the main code entry standby mode. |
| 2 | NO | Without canceling the trouble, the machine returns to the main code entry standby mode. |

SIMULATION 17
PF TROUBLE CANCELLATION.
ARE YOU SURE?
1. YES
2. NO

1

21

21-1

| Purpose | Setting |
|--------------------|------------------------------------|
| Function (Purpose) | Used to set the maintenance cycle. |
| Item | Specifications Counter |

Operation/Procedure

- 1) Enter the number corresponding to the maintenance timing display.
- 2) Press [START] key. The condition entered in procedure 1) is set.

| Maintenance timing display | Set range |
|----------------------------|---|
| 0 | Default (Differs depending on the model.) 0 - 999 |
| 1 - 300 | Maintenance display at 1K - 300K |
| 999 | No maintenance display |

SIMULATION 21-1

MAINTENANCE CYCLE SETUP. INPUT VALUE 0-999, AND PRESS START.

0: DEFAULT

1-300: MAINTENANCE CYCLE (1K-300K)

999: FREE

0

22

22-1

| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
|--------------------|--|
| Function (Purpose) | Used to check the print count value in each section and each operation mode. (Used to check the maintenance timing.) |
| Section | |
| Item | Counter |

Operation/Procedure

Various print counter values are displayed.

| | |
|-------------------|--|
| TOTAL | Total counter |
| DRUM | Drum counter |
| TONER | Toner counter |
| DEVE | Developer counter |
| MAINTENANCE | Maintenance counter |
| TOTAL OUTPUT | Total output quantity |
| COPIES | Copy effective paper counter |
| PRINTER | Printer counter |
| FAX | FAX print counter |
| I-FAX OUTPUT | iFAX print counter |
| DOC FILING OUTPUT | Document filing print counter |
| RIGHT SIDE OUTPUT | Right paper exit counter |
| OTHERS | Other print counter (List print, etc.) |

SIMULATION 22-1

COUNTER DATA DISPLAY.

TOTAL: ***** DRUM: ***** TONER: *****

DEVE: ***** MAINTENANCE: *****

TOTAL OUTPUT: ***** COPIES: *****

PRINTER: ***** FAX OUTPUT: *****

I-FAX OUTPUT: ***** DOC FILING OUTPUT: *****

RIGHT SIDE: ***** OTHERS: *****

22-2

| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
|--------------------|--|
| Function (Purpose) | Used to check the total numbers of misfeed and troubles. (When the number of misfeed is considerably great, it is judged as necessary for repair. The misfeed rate is obtained by dividing this count value with the total counter value.) |
| Item | Trouble |

Operation/Procedure

The paper jam/trouble counter value is displayed.

| | |
|-----------|----------------------|
| PAPER JAM | Number of paper jams |
| SPF JAM | Number of SPF jams |
| TROUBLE | Number of troubles |

SIMULATION 22-2

JAM/TROUBLE COUNTER DATA DISPLAY.

PAPER JAM: ***** SPF JAM: *****

TROUBLE: *****

22-3

| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
|--------------------|--|
| Function (Purpose) | Used to check misfeed positions and the misfeed count of each position. (If the misfeed count is considerably great, it may be judged as necessary to repair.) |
| Section | Sections other than SPF/DSPF section |
| Item | Trouble Misfeed |

Operation/Procedure

The history of paper jams and misfeed is displayed.

The misfeed history is displayed sequentially from the latest one. The max. 100 items of misfeed history can be recorded. The data may be used to identify trouble position.

The latest 100 items of paper jam history are displayed. (Refer to the jam cause code table below.)

(Jam cause code)

| Code | Description |
|--------------|--|
| NO_JAM_CAUSE | No jam. Also used to cancel a jam. |
| ▲ TRAY1 | Tray 1 paper feed jam (PFD2 not-reached) |
| PFD2_NM1 | PFD2 not-reached jam (Tray 3 feed paper) |
| PFD2_NM2 | PFD2 not-reached jam (Tray 4 feed paper) |
| PFD2_NAD | PFD2 not-reached jam (ADU re-feed paper) |
| ▲ PFD2_ST1 | PFD2 remaining jam (Tray 1 feed paper) |
| PFD2_SM1 | PFD2 remaining jam (Tray 3 feed paper) |
| PFD2_SM2 | PFD2 remaining jam (Tray 4 feed paper) |
| PFD2_SAD | PFD2 remaining jam (ADU re-feed paper) |
| PPD_NMF | PPD1 not-reached jam (Manual feed tray feed paper) |
| ▲ PPD_NT1 | PPD1 not-reached jam (Tray 1 feed paper) |
| PPD_NT2 | PPD1 not-reached jam (Tray 2 feed paper) |
| PPD_NM1 | PPD1 not-reached jam (Tray 3 feed paper) |
| PPD_NM2 | PPD1 not-reached jam (Tray 4 feed paper) |
| PPD_NLC | PPD1 not-reached jam (LCC paper feed paper) |
| PPD_NAD | PPD1 not-reached jam (ADU re-feed paper) |
| PPD_SMF | PPD1 remaining jam (Manual feed tray feed paper) |
| ▲ PPD_ST1 | PPD1 remaining jam (Tray 1 feed paper) |
| PPD_ST2 | PPD1 remaining jam (Tray 2 feed paper) |
| PPD_SM1 | PPD1 remaining jam (Tray 3 feed paper) |

| | Code | Description |
|---------|--|---|
| A | PPD_SM2 | PPD1 remaining jam (Tray 4 feed paper) |
| | PPD_SLC | PPD1 remaining jam (LCC paper feed paper) |
| | PPD_SAD | PPD1 remaining jam (ADU re-feed paper) |
| | | |
| | PPD_PRI | PPD1 jam (Image ready request is not sent from ICU.) |
| | | |
| | PSD_N | PSD not-reached jam (currently not detected) |
| | PSD_S | PSD remaining jam (currently not detected) |
| | POD1_N | POD1 not-reached jam |
| | POD1_S | POD1 remaining jam |
| | POD1_LDV | POD1 jam (LCV is turned OFF.) |
| | POD2_N | POD2 not-reached jam |
| | POD2_SR | POD2 remaining jam (When paper is discharged on the right side of the machine.) |
| | POD2_SL | POD2 remaining jam (When paper is discharged on the left side of the machine.) |
| | | |
| | AINPD_N | ADU paper entry sensor not-reached jam |
| | AINPD_S | ADU paper entry sensor remaining jam |
| | APPD1_N | ADU transport sensor 1 not-reached jam |
| APPD1_S | ADU transport sensor 1 remaining jam | |
| APPD2_N | ADU transport sensor 2 not-reached jam | |
| APPD2_S | ADU transport sensor 2 remaining jam | |
| | | |
| A | DESK1 | Tray 3 paper feed jam (M1PFD not-reached) |
| | M1PFD_N2 | M1PFD not-reached jam (Tray 4 feed paper) |
| | M1PFD_S1 | M1PFD remaining jam (Tray 3 feed paper) |
| | M1PFD_S2 | M1PFD remaining jam (Tray 4 feed paper) |
| | DESK2 | Tray 4 paper feed jam (M2PFD not-reached) |
| | M2PFD_S | M2PFD remaining jam |
| | | |
| A | MPRD2_N2 | MPRD2 not-reached jam (Tray 2 feed paper) |
| | MPRD2_NM | MPRD2 not reached jam (Manual paper feed tray feed paper) |
| | MPRD2_NL | MPRD2 not-reached jam (LCC paper feed paper) |
| A | MPRD2_S2 | MPRD2 remaining jam (Tray 2 feed paper) |
| | MPRD2_SM | MPRD2 remaining jam (Manual paper feed tray feed paper) |
| | MPRD2_SL | MPRD2 remaining jam (LCC paper feed paper) |
| A | TRAY2 | Tray 2 paper feed jam (MPRD1 not-reached) |
| | MPRD1_NM | MPRD1 not-reached jam (Manual paper feed tray feed paper) |
| | MPRD1_NL | MPRD1 not-reached jam (LCC paper feed paper) |
| A | MPRD1_S2 | MPRD1 remaining jam (Tray 2 feed paper) |
| | MPRD1_SM | MPRD1 remaining jam (Manual paper feed tray feed paper) |
| | MPRD1_SL | MPRD1 remaining jam (LCC paper feed paper) |
| | MPFD2_NM | MPFD2 not-reached jam (Manual paper feed tray feed paper) |
| | MPFD2_NL | MPFD2 not-reached jam (LCC paper feed paper) |
| | MPFD2_SM | MPFD2 remaining jam (Manual paper feed tray feed paper) |
| | MPFD2_SL | MPFD2 remaining jam (LCC paper feed paper) |
| | BPT | Manual paper feed tray paper feed jam (MPFD1 not-reached) |
| | MPFD1_S | MPFD1 remaining jam |
| | LPPD_N | LPPD not-reached jam |
| LPPD_S | LPPD remaining jam | |
| | LPPD_LCC | LPPD jam (No reply in a certain time after preliminary paper feed from LCC and issuing the paper feed command.) |

| Code | Description |
|-----------|---|
| LCC | LCC paper feed jam (LTD not-reached jam) |
| LTD_S | LTD remaining jam |
| | |
| FES_N | FINISHER Inlet port sensor not-reached jam |
| FES_S | FINISHER Inlet port sensor remaining jam |
| FFPS_N | FINISHER Saddle not-reached jam |
| FFPS_S | FINISHER Saddle remaining jam |
| FEXIT_S | FINISHER Bundle exit remaining jam |
| FSTPL | FINISHER Staple jam |
| FPNCH | FINISHER Punch jam |
| FDOP | FINISHER Door open jam |
| FIN_TIME | FINISHER Abnormal paper interval jam |
| | |
| REG_SEN_N | INSERTER Resist sensor not-reached jam (When inserter paper feed) |
| REG_SEN_S | INSERTER Resist sensor remaining jam (When inserter paper feed) |
| TIM_SEN_N | INSERTER Timing sensor not-reached jam (When inserter paper feed) |
| TIM_SEN_S | INSERTER Timing sensor remaining jam (When inserter paper feed) |
| HI_SEN_NI | INSERTER Paper exit sensor not-reached jam (When inserter paper feed) |
| HI_SEN_NP | INSERTER Paper exit sensor not-reached jam (Main unit paper feed) |
| HI_SEN_S | INSERTER Paper exit sensor remaining jam |
| H_SEN_NF | INSERTER Reverse sensor not-reached jam (When entering into the reverse path.) |
| H_SEN_NB | INSERTER Reverse sensor not-reached jam When discharging to the reverse path.) |
| H_SEN_SF | INSERTER Reverse sensor remaining jam (When entering into the reverse path.) |
| H_SEN_SB | INSERTER Reverse sensor remaining jam (When discharging to the reverse path.) |

SIMULATION 22-3

PAPER JAM HISTORY.

```
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****
```

(10 lines, 80 digits = 800 characters)

22-4

| | |
|---------------------------|--|
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to check the trouble (self diag) history. |
| Section | |
| Item | Trouble |

Operation/Procedure

The trouble history is displayed.

The trouble history is displayed sequentially from the latest one. The max. 100 items can be stored. (The oldest one is deleted sequentially. The trouble position can be identified by the data.)

SIMULATION 22-4

TROUBLE HISTORY.

[illegible]

(10 lines, 80 digits = 800 characters)

| | |
|--------------------|---|
| 22-5 | |
| Purpose | Other |
| Function (Purpose) | Used to check the ROM version of each unit (section). |
| Section | |
| Item | Software |

Operation/Procedure

1)The ROM version of each section can be checked. When there is any problem in the software, use this simulation to check the ROM version of each section and revise the version if necessary.

| | |
|-------------|------------------------------|
| S/N | Engine section serial number |
| MFP | MFP controller |
| (LANGUAGE) | (Language version) |
| BOOT | MFP controller BOOT ROM |
| FAX | FAX controller |
| PCU | PCU controller |
| SCANNER | Scanner controller |
| FINISHER | Finisher controller |
| SADDLE UNIT | Saddle unit |
| LCC | Side LCC |
| INSERTER | Insertor |

| | | | |
|---------------------------|------|------------------|------|
| SIMULATION 22-5 | | | |
| ROM VERSION DATA DISPLAY. | | | |
| S/N: 0000000000 | | | |
| MFP: | 1.00 | (LANGUAGE: 1.00) | |
| PCU: | 1.00 | BOOT: | 1.00 |
| SCANNER: | 1.00 | FAX: | 1.00 |
| FINISHER: | 1.00 | | |
| SADDLE UNIT: | 1.00 | LCC: | 1.00 |
| INSERTER: | 1.00 | | |

| | |
|--------------------|--|
| 22-6 | |
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to output the list of the setting and adjustment data (simulations, FAX soft switch, counters). |
| Section | |
| Item | Data Adjust/Setting data |

Operation/Procedure

When installing or servicing this machine, execute this simulation to print and save various setting and adjustment data for next servicing. (For example, memory trouble, PWB replacement, etc.)

- 1) Enter 1 with 10-key.
- 2) Press [START] key.

The various setting and adjustment data are printed out. (The print paper cannot be selected optionally.)

| | | |
|---|-------------|---|
| 0 | TRAY SELECT | TRAY SELECT auto only (Selection is not allowed.) |
| 1 | PRINT START | PRINT START |

| | |
|---|------------|
| SIMULATION 22-6 | |
| DATA PRINT MODE. SELECT SETTING, AND PRESS START. | |
| 0. TRAY SELECT | :AUTO ONLY |
| 1. PRINT START | |

Select 1 and press [START] key.

Press [CUSTOMSETTING] key or [START] key.

| | |
|-------------------------------|----|
| SIMULATION 22-6 | |
| DATA PRINT MODE. EXECUTING... | |
| 0. TRAY SELECT | :1 |

| | |
|--------------------|---|
| 22-7 | |
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to display the key operator code. (This simulation is used when the customer forgets the key operator code.) |
| Section | |
| Item | Data User data |

Operation/Procedure

The key operator code is displayed.

| | |
|----------------------------|-------|
| SIMULATION 22-7 | |
| KEY OPERATOR CODE DISPLAY. | |
| CODE: | ***** |

| | |
|--------------------|--|
| 22-8 | |
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to check the number of use of the finisher, the SPF, and the scan (reading) unit. |
| Section | Optical (Image scanning) Finisher |
| Item | Counter |

Operation/Procedure

The values of the finisher counter, the scanner (read), counter, and the SPF related counters are displayed.

| | |
|----------------|-------------------------------|
| SPF | Document feed quantity |
| SCAN | Number of scans |
| STAPLER | Number of stapling |
| PUNCH | Number of punching |
| STAMP | Number of SPF finish stamps |
| SADDLE STAPLER | Number of saddle staples |
| INSERTER | Number of inserter operations |

| | |
|-----------------------------------|-------|
| SIMULATION 22-8 | |
| ORG./STAPLE COUNTER DATA DISPLAY. | |
| SPF: | ***** |
| SCAN: | ***** |
| STAPLER: | ***** |
| PUNCH: | ***** |
| STAMP: | ***** |
| SADDLE STAPLER: | ***** |
| INSERTER: | ***** |
| INSERTER OFF LINE: | ***** |

| | |
|--------------------|--|
| 22-9 | |
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to check the number of use (print quantity) of each paper feed section. |
| Section | Paper feed, ADU |
| Item | Counter |

Operation/Procedure

The values of the paper feed related counters are displayed.

| | |
|-------|-------------------------------|
| TRAY1 | Tray 1 use quantity |
| TRAY2 | Tray 2 use quantity |
| TRAY3 | Tray 3 use quantity |
| TRAY4 | Tray 4 use quantity |
| BPT | Manual feed tray use quantity |
| ADU | Duplex paper feed quantity |
| LCC | Side LCC use quantity |

| | |
|----------------------------------|-------|
| SIMULATION 22-9 | |
| PAPER FEED COUNTER DATA DISPLAY. | |
| TRAY1: | ***** |
| TRAY2: | ***** |
| TRAY3: | ***** |
| TRAY4: | ***** |
| BPT: | ***** |
| ADU: | ***** |
| LCC: | ***** |

| | |
|--------------------|---|
| 22-10 | |
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to check the system configuration (option, internal hardware). |
| Section | |
| Item | SpecificationsOptions |

Operation/Procedure

The system configuration is displayed. (The model names of the installed devices and options are displayed.)

| | |
|---------------|---|
| MACHINE | (Model code) |
| FINISHER | NONE/ (Model code) |
| LCC | NONE/ (Model code) |
| INSERTER | NONE/ (Model code) |
| PUNCH | NONE/ (Model code) |
| SYSTEM MEMORY | Memory capacity (MB) |
| HDD | Hard disk capacity (MB) |
| NIC | NONE/ NIC |
| NSCN | NONE/ (Network scanner) |
| PS3 | NONE/ (PS 3 expansion kit) |
| FAX | NONE/ (Model code) |
| FAX MEMORY | FAX expansion memory capacity (MB) |
| STAMP | Finish stamp NONE/ (Model code) |
| PCU TYPE | PCU PWB type (JPN: Japan, EX: EX Japan) |

(Model code list)

| Item | Display | Content |
|------------------|----------------|---|
| MACHINE | AR-555S/ M550U | Copier model (55-sheet model) |
| | AR-625S/ M620U | Copier model (62-sheet model) |
| | AR-705S/ M700U | Copier model (70-sheet model) |
| | AR-555M/ M550N | Network print standard provision model (55-sheet model) |
| | AR-625M/ M620N | Network print standard provision model (62-sheet model) |
| | AR-705M/ M700N | Network print standard provision model (70-sheet model) |
| INSERTER | ---- | Inserter not installed |
| | AR-CF2 | Inserter installed |
| FINISHER | ---- | After-process unit not installed |
| | AR-F15 | Finisher installed |
| | AR-F16 | Saddle finisher installed |
| PUNCH | ---- | Punch unit not installed |
| | AR-PN4A | Punch unit installed (2-hole) |
| | AR-PN4B | Punch unit installed (2-hole/3-hole auto select) |
| | AR-PN4C | Punch unit installed (4-hole) |
| | AR-PN4D | Punch unit installed (4-hole, wide) |
| LCC | ---- | Side LCC not installed |
| | AR-LC6 | Side LCC installed |
| MEMORY | OMB | Expansion memory not installed |
| | ***MB | Expansion memory ***MB |
| HD | OMB | Hard disk not installed |
| | ****MB | Hard disk installed () |
| NIC | ---- | Network card not installed |
| | NIC | Network card installed |
| PS EXPANSION KIT | ---- | PS expansion kit not installed |
| | AR-PK5 | PS expansion kit installed |
| FAX | ---- | FAX expansion kit not installed |
| | AR-FX8 | FAX expansion installed |
| NETWORKS CANNER | ---- | Network expansion kit not installed |
| | AR-NS3 | Network expansion kit installed |

| Item | Display | Content |
|------------------|---------|------------------------------------|
| EXPANSION MEMORY | ---- | FAX expansion memory not installed |
| | AR-MM9 | FAX expansion memory installed |
| FINISH STAMP | ---- | Finish stamp unit not installed |
| | AR-SU1 | Finish stamp unit installed |

SIMULATION 22-10
SYSTEM INFORMATION.
MACHINE: *****
FINISHER: ***** PUNCH: *****
LCC: ***** INSERTER: *****
SYSTEM MEMORY: ***MB HDD: ***MB
NIC: ***** NSCN: ***** PCU: *****
FAX: ***** FAX MEMORY: ***MB
STAMP: *****
PCU TYPE: *****

| | |
|--------------------|---|
| 22-11 | |
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to check the use frequency (send/receive) of FAX. (Only when FAX is installed) |
| Section | FAX |
| Item | Data |

Operation/Procedure

The values of the FAX send counter and the FAX receive counter are displayed.

| | |
|--------------|-----------------------|
| FAX SEND | Number of FAX send |
| FAX RECEIVE | Number of FAX receive |
| FAX OUTPUT | Number of FAX print |
| SEND IMAGES | Send quantity |
| SEND TIME | Send time |
| RECEIVE TIME | Receive time |

SIMULATION 22-11
FAX COUNTER DATA DISPLAY.
FAX SEND: ***** FAX RECEIVE : *****
FAX OUTPUT:*****
SEND IMAGES: ***** SEND TIME: *****;*:**
RECEIVE TIME: *****;*:**

| | |
|--------------------|---|
| 22-12 | |
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to check the SPF misfeed positions and the number of misfeed at each position. (When the number of misfeed is considerably great, it can be judged as necessary for repair.) |
| Section | DSPF |
| Item | Trouble |

Operation/Procedure

The history of paper jam and misfeed is displayed.

The misfeed history is displayed sequentially from the latest one. The max. 20 items are recorded. (The oldest one is sequentially deleted.) This data can be used to identify the trouble position.

The latest 20 data of document jam history are displayed. (Refer to the jam code below.)

(Jam cause code)

| Code | Description |
|--------------|------------------------------------|
| NO_JAM_CAUSE | No jam. Also used to cancel a jam. |
| SPPD1_N | SPPD1 not-reached jam |
| SPPD1_S | SPPD1 remaining jam |
| SPPD2_N | SPPD2 not-reached jam |
| SPPD2_S | SPPD2 remaining jam |
| SPPD3_N | SPPD3 not-reached jam |

| Code | Description |
|----------|---------------------------------------|
| SPPD3_S | SPPD3 remaining jam |
| SPPD4_N | SPPD4 not-reached jam |
| SPPD4_S | SPPD4 remaining jam |
| SPOD_N | SPOD not-reached jam |
| SPOD_S | SPOD remaining jam |
| SPSD_SCN | Exposure start notification timer end |

SIMULATION 22-12
SPF JAM HISTORY.

(10 lines, 80 digits = 800 characters)

22-13

| | |
|---------------------------|--|
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to check the operating time of the process section (OPC drum, DV unit, toner bottle). |
| Section | |
| Item | Counter |

Operation/Procedure

The rotating time and the print quantity of the process section (OPC drum, DV unit (developer), toner motor (toner bottle)) are displayed.

| | | |
|-------|-------------|----------------------|
| DRUM | OPC drum | Count value (counts) |
| | | Rotating time (sec) |
| TONER | Toner motor | Count value (counts) |
| | | Rotating time (sec) |
| DEVE | DV unit | Count value (counts) |
| | | Rotating time (sec) |

SIMULATION 22-13
PROCESS DATA DISPLAY.
DRUM: ***** (counts) ***** (sec.)
TONER: ***** (counts) ***** (sec.)
DEVE: ***** (counts) ***** (sec.)

22-19

| | |
|---------------------------|--|
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to check the values of the counters related to the scan mode and the internet FAX mode. |
| Section | Scanner |
| Item | Counter |

Operation/Procedure

The values of the counters related to the scan mode and the internet FAX mode are displayed.

| | |
|----------------------------------|--|
| NETWORK SCANNER ORIGINAL COUNTER | Document scan quantity (OC, SPF total quantity) |
| MAIL COUNTER | Number of times of mail send |
| FTP COUNTER | Number of times of FTP send |
| INTERNET-FAX ORIGINAL COUNTER | Document scan quantity (OC, SPF, total quantity) |
| INTERNET-FAX SEND | Number of times of internet FAX send |
| INTERNET-FAX RECEIVE | Number of times of internet FAX receive |
| INTERNET-FAX OUTPUT | Internet FAX print quantity |
| SCAN TO HDD | Scan to HDD record quantity |
| INTERNET-FAX SEND IMAGES | IFAX send quantity counter |
| MAIL SEND IMAGES | MAIL send quantity counter |
| FTP SEND IMAGES | FTP send quantity counter |

SIMULATION 22-19
NETWORK SCANNER AND INTERNET-FAX COUNTER DISPLAY.

NETWORK SCANNER ORIGINAL COUNTER: *****
MAIL COUNTER: *****
FTP COUNTER: *****
INTERNET-FAX ORIGINAL COUNTER: *****
INTERNET-FAX SEND: *****
INTERNET-FAX RECEIVE: *****
INTERNET-FAX OUTPUT: *****
SCAN TO HDD : *****
INTERNET-FAX SEND IMAGES: *****
MAIL SEND IMAGES: *****
FTP SEND IMAGES: *****

23

23-2

| | |
|---------------------------|---|
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to check the trouble history of paper jam and misfeed. (If the number of misfeed and troubles is considerably great, it may be judged as necessary to repair.) |
| Item | Trouble |

Operation/Procedure

- 1) Select "1. PRINT START."
- 2) Press [START] key.

The trouble history of paper jam and misfeed is printed.
This data can be cleared by SIM 24-1.

SIMULATION 23-2
JAM/TROUBLE DATA PRINT MODE. SELECT SETTING, AND PRESS START.
0. TRAY SELECT : AUTO ONLY
1. PRINT START

Press [START] key.

Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 23-2
JAM/TROUBLE DATA PRINT MODE.. EXECUTING...
0. TRAY SELECT : 1

23-80

| | |
|---------------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the sensors and detectors in the paper feed and transport section. |
| Section | Paper feed, paper transport |
| Item | Operation |

Operation/Procedure

- 1) Select "2. PRINT PATTERN."
- 2) Press [START] key.
- 3) Select "1" (Paper transport time data) with 10-key.
- 4) Press [START] key.

The list of the ON time of the sensors and the detectors of the paper transport section is printed. When a paper jam or misfeed is generated, the ON time of each sensor and detector is checked to check if the operation of the sensor and the detector, paper feed, and transport are normal or not.



| | | |
|---|-----------------------|---|
| 0 | TRAY SELECT AUTO ONLY | Auto only (No selection allowed) |
| 1 | PRINT START | Print execution Print of the set data is executed. |
| 2 | PRINT PATTERN | Print pattern 1. Paper transport time data |

SIMULATION 23-80
DATA PRINT MODE. SELECT SETTING, AND PRESS START.
0. TRAY SELECT :AUTO ONLY
1. PRINT START
2. PRINT PATTERN:

Select 1 and
press [START] key.

Press [CUSTOM SETTING] key
or [START] key.

SIMULATION 23-80
DATA PRINT MODE. EXECUTING...
0. TRAY SELECT :

Select 2 and press [START] key.

Press [CUSTOM SETTING] key
or [START] key.

SIMULATION 23-80
DATA PRINT MODE. INPUT VALUE, AND PRESS START.
(PRINT PATTERN)
INPUT 1.

24

24-1

| | |
|--------------------|---|
| Purpose | Data clear |
| Function (Purpose) | Used to clear the misfeed counter, the misfeed history, the trouble counter, and the trouble history. (The counters are cleared after completion of maintenance.) |
| Section | |
| Item | Counter |

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press [START] key.

| | | |
|---|-----------|----------------------|
| 1 | PAPER JAM | Number of paper jams |
| 2 | SPF JAM | Number of SPF jams |
| 3 | TROUBLE | Number of troubles |

SIMULATION 24-1
JAM/ TROUBLE COUNTER DATA CLEAR. SELECT1-3, AND PRESS START.
1. PAPER JAM
2. SPF JAM
3. TROUBLE

Press [START] key.

Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 24-1
* COUNTER DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO

* = PAPER JAM, SPF JAM, TROUBLE

24-2

| | |
|--------------------|--|
| Purpose | Data clear |
| Function (Purpose) | Used to clear the number of use (the number of prints) of each paper feed section. |
| Section | Paper feed |
| Item | Counter |

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press [START] key.

| | | |
|---|-------|-------------------------------|
| 1 | TRAY1 | Tray 1 use quantity |
| 2 | TRAY2 | Tray 2 use quantity |
| 3 | TRAY3 | Tray 3 use quantity |
| 4 | TRAY4 | Tray 4 use quantity |
| 5 | BPT | Manual feed tray use quantity |
| 6 | ADU | Duplex feed quantity |
| 7 | LCC | Side LCC use quantity |

SIMULATION 24-2
PAPER FEED COUNTER DATA CLEAR. SELECT1-6, AND PRESS START.
1. TRAY1 2. TRAY2
3. TRAY3 4. TRAY4
5. BPT 6. ADU
7. LCC

Press [START] key.

Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 24-2
* COUNTER DATA CLEAR.
ARE YOU SURE?
1. YES
2. NO

* = TRAY1, TRAY2, TRAY3, TRAY4, BPT, ADU, LCC

| | |
|---------------------------|--|
| 24-3 | |
| Purpose | Data clear |
| Function (Purpose) | Used to clear the number of use of the finisher, SPF, and the scan (reading) unit. |
| Section | |
| Item | Counter |

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press [START] key.

| | | |
|---|----------------|-------------------------------------|
| 1 | SPF | SPF paper pass quantity |
| 2 | SCAN | Number of times of document scan |
| 3 | STAPLER | Number of times of stapling |
| 4 | PUNCH | Number of times of punching |
| 5 | STAMP | Number of times of SPF finish stamp |
| 6 | SADDLE STAPLER | Number of times of saddle stapling |
| 7 | INSERTER | Number of times inserter operations |

SIMULATION 24-3
ORG./STAPLE COUNTER DATA CLEAR. SELECT1-8, AND PRESS START.

1. SPF
2. SCAN
3. STAPLER
4. PUNCH
5. STAMP
6. SADDLE STAPLER
7. INSERTER
8. INSERTER OFF LINE

Press [START] key.

Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 24-3
* COUNTER DATA CLEAR.
ARE YOU SURE?

1. YES
2. NO

* = SPF, SCAN, STAPLER, PUNCH, STAMP, SADDLE STAPLER, INSERTER

| | |
|---------------------------|--|
| 24-4 | |
| Purpose | Data clear |
| Function (Purpose) | Used to reset the maintenance counter. |
| Section | |
| Item | Counter |

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press [START] key.

| | | |
|---|-------------|---------------------|
| 1 | MAINTENANCE | Maintenance counter |
|---|-------------|---------------------|

SIMULATION 24-4
MAINTENANCE COUNTER DATA CLEAR. PRESS START.

1. MAINTENANCE

Press [START] key.

Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 24-4
* COUNTER DATA CLEAR.
ARE YOU SURE?

1. YES
2. NO

* = MAINTENANCE

| | |
|---------------------------|--|
| 24-5 | |
| Purpose | Data clear |
| Function (Purpose) | Used to reset the developer counter. (The developer counter of the DV unit which is installed is reset.) |
| Section | Image process (Photoconductor/Developing/Transfer/Cleaning) |
| Item | Counter Developer |

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press [START] key.

| | | |
|---|--------------|---------------------|
| 1 | DV CARTRIDGE | Developer cartridge |
|---|--------------|---------------------|

SIMULATION 24-5
DEVELOPER COUNTER DATA CLEAR. PRESS START.

1. DV CARTRIDGE

Press [START] key.

Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 24-5
* COUNTER DATA CLEAR.
ARE YOU SURE?

1. YES
2. NO

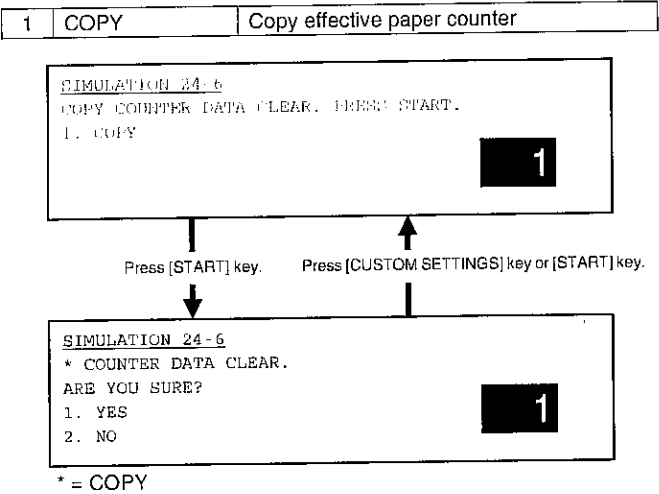
▲ * = DV CARTRIDGE

| | |
|---------------------------|---------------------------------|
| 24-6 | |
| Purpose | Data clear |
| Function (Purpose) | Used to reset the copy counter. |
| Section | |
| Item | Counter Copy |

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear

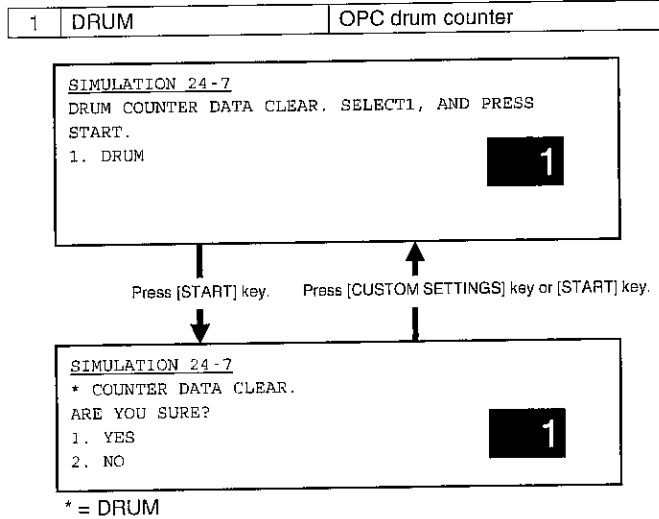
4) Press [START] key.



| | |
|--------------------|--|
| 24-7 | |
| Purpose | Data clear |
| Function (Purpose) | Used to clear the OPC drum counter. (Perform this simulation when the OPC drum is replaced.) |
| Section | Image process (Photoconductor/Developing/Transfer/Cleaning) |
| Item | Counter Photo conductor |

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
 - 2) Press [START] key.
The confirmation to clear is opened.
 - 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
 - 4) Press [START] key.
- After replacing the OPC drum, be sure to clear the OPC drum counter.

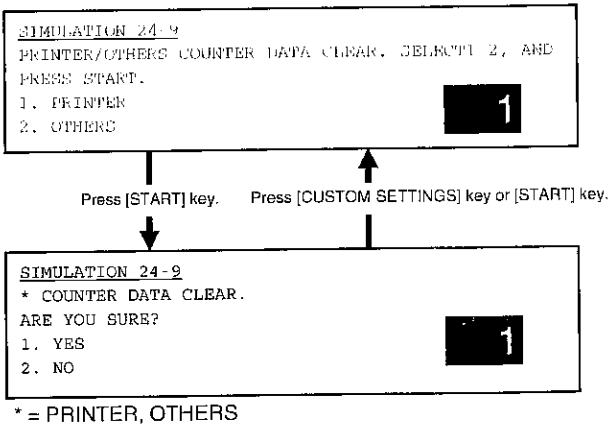


| | |
|--------------------|--|
| 24-9 | |
| Purpose | Data clear |
| Function (Purpose) | Used clear the printer mode print counter and the self print mode print counter. |
| Section | Printer |
| Item | Counter |

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
 - 2) Press [START] key.
The confirmation to clear is opened.
 - 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
 - 4) Press [START] key.
- After replacing the OPC drum, be sure to clear the OPC drum counter.

| | | |
|---|---------|---|
| 1 | PRINTER | Printer counter (Print mode) |
| 2 | OTHERS | Other effective paper counter (Self print mode) |



| | |
|--------------------|---|
| 24-10 | |
| Purpose | Data clear |
| Function (Purpose) | Used to clear the FAX counter. (Only when FAX is installed) |
| Section | FAX |
| Item | Counter |

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press [START] key.

| | | |
|---|--------------|--------------------------------|
| 1 | FAX SEND | Number of times of FAX send |
| 2 | FAX RECEIVE | Number of times of FAX receive |
| 3 | FAX OUTPUT | FAX print quantity |
| 4 | SEND IMAGES | Send quantity |
| 5 | SEND TIME | Send time |
| 6 | RECEIVE TIME | Receive time |

SIMULATION 24-10
 FAX COUNTER DATA CLEAR. SELECT1-6, AND PRESS START.

1. FAX SEND
2. FAX RECEIVED
3. FAX OUTPUT
4. SEND IMAGES
5. SEND TIME
6. RECEIVE TIME

Press [START] key. Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 24-10
 * COUNTER DATA CLEAR.
 ARE YOU SURE?

1. YES
2. NO

* = FAX SEND, FAX RECEIVED, FAX OUTPUT, SEND IMAGES, SEND TIME, RECEIVE TIME

24-11

| | |
|---------------------------|---|
| Purpose | Data clear |
| Function (Purpose) | Used to reset the OPC drum rotation time, and the DV unit rotation time counter. The developer counter in the DV unit installed is reset. |
| Section | Image process (Photoconductor/Developing/Transfer/Cleaning) |
| Item | Counter Developer |

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press [START] key.
The confirmation to clear is opened.
- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press [START] key.

| | | |
|---|---------------|------------------------|
| 1 | DRUM ROTATION | OPC drum rotation time |
| 2 | DV ROTATION | DV unit rotation time |

SIMULATION 24-11
 TIMER DATA CLEAR. SELECT1-2, AND PRESS START.

1. DRUM ROTATION
2. DV ROTATION

Press [START] key. Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 24-11
 * TIMER DATA CLEAR.
 ARE YOU SURE?

1. YES
2. NO

* = DRUM ROTATION, DV ROTATION

24-15

| | |
|---------------------------|--|
| Purpose | Data clear |
| Function (Purpose) | Used to clear the counters related to the scan mode and the internet FAX mode. |
| Section | |
| Item | Counter |

Operation/Procedure

- 1) Select the counter to be cleared with 10-key.
- 2) Press [START] key.
The confirmation to clear is opened.

- 3) Select Yes/NO of counter clear with 10-key.
YES: Clear
NO: Not clear
- 4) Press [START] key.

| | | |
|----|----------------------------------|--|
| 1 | NETWORK SCANNER ORIGINAL COUNTER | Document scan quantity counter in the network scanner mode |
| 2 | MAIL COUNTER | Number of times of mail send |
| 3 | FTP COUNTER | Number of times of FTP send |
| 4 | INTERNET-FAX ORIGINAL COUNTER | Internet FAX document scan quantity (Total quantity of OC and SPF) |
| 5 | INTERNET-FAX SEND | Number of times of internet FAX send |
| 6 | INTERNET-FAX RECEIVE | Number of times of internet FAX receive |
| 7 | INTERNET-FAX OUTPUT | Internet FAX print quantity |
| 8 | SCAN TO HDD | SCAN TO HDD record quantity |
| 9 | INTERNET-FAX SEND IMAGES | IFAX send quantity counter |
| 10 | MAIL SEND IMAGES | MAIL send quantity counter |
| 11 | FTP SEND IMAGES | FTP send quantity counter |

SIMULATION 24-15
 NETWORK SCANNER AND INTERNET-FAX COUNTER CLEAR. SELECT1-3, AND PRESS START.

1. NETWORK SCANNER ORIGINAL COUNTER
2. MAIL COUNTER
3. FTP COUNTER
4. INTERNET-FAX ORIGINAL COUNTER: *****
5. INTERNET-FAX SEND: *****
6. INTERNET-FAX RECEIVE: *****
7. INTERNET-FAX OUTPUT: *****
8. SCAN TO HDD: *****
9. INTERNET-FAX SEND IMAGES: *****
10. MAIL SEND IMAGES: *****
11. FTP SEND IMAGES: *****

Press [START] key. Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 24-15
 * COUNTER DATA CLEAR.
 ARE YOU SURE?

1. YES
2. NO

* = NETWORK SCANNER ORIGINAL, MAIL, FTP, INTERNET-FAX ORIGINAL COUNTER, INTERNET-FAX SEND, INTERNET-FAX RECEIVE, INTERNET-FAX OUTPUT, SCAN TO HDD, INTERNET-FAX SEND IMAGES, MAIL SEND IMAGES, FTP SEND IMAGES

25

25-1

| | |
|---------------------------|---|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the developing section (toner concentration, humidity and toner concentration sensor, humidity sensor). (The toner concentration sensor output can be monitored.) |
| Section | Process (Developing section) |
| Item | Operation |

Operation/Procedure

- 1) Press [START] key.

The developing motor and the OPC drum motor rotate, and the toner concentration detection level and the humidity sensor detection level are displayed.

SIMULATION 25-1
TONER SENSOR OUTPUT MONITOR. PRESS START.
HUMIDITY AREA : 70.0 - 72.5
DEVE REFERENCE : 128

Press [START] key.

Press [CUSTOM SETTINGS] key, and the operation is stopped immediately or after 3 min.

SIMULATION 25-1
DV MONITOR. EXECUTING...
HUMIDITY AREA : 70.0 - 72.5
DEVE REFERENCE : 128

25-2

| Purpose | Setting |
|--------------------|---|
| Function (Purpose) | Used to make the initial setting of toner concentration when replacing developer. |
| Section | Image process (Photoconductor/Developing/Transfer/Cleaning) |
| Item | |

Operation/Procedure

- 1) Press [START] key.

The developing motor rotates for 3 min and the toner concentration sensor makes sampling of toner concentration to display the detection level.

After the developing motor stops, the average value of toner concentration sampling is set as the reference toner concentration level.

- ▲ 2) The humidity near the developing tank at the developing adjustment is registered.

NOTE: When the above operation is interrupted on the way, the reference toner concentration level is not set. Also when error code of EE-EL or EE-EU is displayed, the reference toner concentration level is not set normally.

(Default: 114)

SIMULATION 25-2
AUTOMATIC DV ADJUSTMENT. PRESS START.
HUMIDITY AREA : 70.0 - 72.5
DEVE REFERENCE : 114

Press [START] key.

Press [CUSTOM SETTINGS] key, and the operation is stopped immediately or after 3 min.

SIMULATION 25-2
AUTOMATIC DV ADJUSTMENT. EXECUTING...
HUMIDITY AREA : 70.0 - 72.5
DEVE REFERENCE : 114

26

26-2

| Purpose | Setting |
|--------------------|---|
| Function (Purpose) | Used to set the paper size of the large capacity tray (LCC) and the paper feed tray 2. (When the paper size is changed, this simulation must be executed to change the paper size in software.) |
| Section | Paper feed |
| Item | Setting |

Operation/Procedure

- 1) Select the number corresponding to the paper feed unit for setting the paper size with 10-key.
- 2) Press [START] key.
- 3) Select the number corresponding to the paper size.
- 4) Press [START] key.

| | | |
|---|--------|--|
| 1 | TRAY 2 | TRAY 2 size (0 = 8.5 x 11, 1 = A4, 2 = B5) |
| 2 | LCC | Side LCC size (0 = 8.5 x 11, 1 = A4, 2 = B5) |

SIMULATION 26-2
SIZE SETUP. SELECT NUMBER, AND PRESS START.
1. TRAY2 0
2. LCC 0

Press [START] key.

Press [CUSTOM SETTINGS] key.

SIMULATION 26-2
LCC SIZE SETUP. SELECT 0-2, AND PRESS START.
0. 8.5x11
1. A4
2. B5

26-3

| Purpose | Setting |
|--------------------|--|
| Function (Purpose) | Used to set the specifications of the auditor. Setting must be made according to the auditor use conditions. |
| Section | Auditor |
| Item | Specifications |

Operation/Procedure

- 1) Select the number corresponding to the auditor mode with 10-key.
- 2) Press [START] key.

| | | |
|---|--------|-----------------------|
| 1 | P10 | Built-in auditor mode |
| 2 | VENDOR | Coin vendor mode |
| 3 | OTHERS | Other |

(Default: 1)

SIMULATION 26-3
AUDITOR SETUP. SELECT 1-3, AND PRESS START.
1. P10
2. VENDOR
3. OTHERS

26-5

| Purpose | Setting |
|--------------------|--|
| Function (Purpose) | Used to set the count mode of the total counter and the maintenance counter. |
| Section | |
| Item | Specifications Counter |

Operation/Procedure

- 1) Select the number corresponding to the counter to be set with 10-key.
 - 2) Press [START] key.
 - 3) Select the count mode with 10-key.
 - 4) Press [START] key.
- Set the count-up (1 or 2) for A3/WLT paper.
(Select the target counter.)

| | | |
|---|----------------------------|---------------------------------------|
| 1 | TOTAL COUNTER | Total counter |
| 2 | MAINTENANCE (DRUM) COUNTER | Maintenance counter/ OPC drum counter |
| 3 | DV COUNTER | Developer counter |

(Count-up)

| | | | |
|---|------------|------------|---------|
| 1 | 1 COUNT UP | 1 count-up | |
| 2 | 2 COUNT UP | 2 count-up | Default |

SIMULATION 26-5
A3 (LEDGER) COUNT UP MODE SETTING. SELECT 1-3, AND PRESS START.
1. TOTAL COUNTER 1
2. MAINTENANCE (DRUM) COUNTER 1
3. DV COUNTER 1

Press [START] key. Press [CUSTOM SETTINGS] key.

SIMULATION 26-5
A3 (LEDGER) COUNT UP MODE SETTING. SELECT 1-2, AND PRESS START.
1. TOTAL COUNTER
(1: 1COUNT UP, 2: 2COUNT UP)

26-6

| Purpose | Setting |
|--------------------|---|
| Function (Purpose) | Used to set the specifications (paper, fixed magnification ratio, etc.) of the destination. |
| Section | |
| Item | Specifications Destination |

Operation/Procedure

- 1) Select the number corresponding to the destination with 10-key.
 - 2) Press [START] key.
- After completion of setting, the machine is automatically reset.

| | | |
|----|-----------|--------------------------|
| 1 | USA | United States of America |
| 2 | CANADA | Canada |
| 3 | INCH | Inch series EX |
| 4 | JAPAN | Japan |
| 5 | AB_B | AB series B5 |
| 6 | EUROPE | Europe |
| 7 | UK | UK |
| 8 | AUSTRALIA | Australia |
| 9 | AB_A | AB series A5 |
| 10 | CHINA | China |

Since this simulation cannot change the Fax destination, use SIM 66-2 to change the FAX destination.

SIMULATION 26-6
DESTINATION SETUP. SELECT 1-10, AND PRESS START.
1.USA 2.CANADA 3.INCH
4.JAPAN 5.AB_B
6.EUROPE 7.UK 8.AUSTRALIA
9.AB_A 10.CHINA

26-10

| Purpose | Setting |
|--------------------|---|
| Function (Purpose) | Used to set the network scanner trial mode. |
| Section | |
| Item | Operation |

Operation/Procedure

- 1) Select START/END of the network scanner trial mode with 10-key.
 - 2) Press [START] key.
- Max. 500 menus can be scanned.

| | | | |
|---|-------|-------------------|---------|
| 0 | END | Trial mode cancel | Default |
| 1 | START | Trial mode start | |

SIMULATION 26-10
NETWORK SCANNER TRIAL SETTING. SELECT 0-1, AND PRESS START.
0.END
1.START

26-18

| Purpose | Setting |
|--------------------|--|
| Function (Purpose) | Used to set YES/NO of toner save operation. (This function is valid only in Japan and UK versions. (Depends on the destination setting of SIM26-6.) For the other destinations, the same setting can be made by the user program P22.) |
| Section | |
| Item | Specifications Operation mode |

Operation/Procedure

- 1) Select YES/NO of the toner save mode with 10-key.
- 2) Press [START] key.

| | | | |
|---|-----|-----------------------------|---------|
| 0 | YES | Toner save mode is set. | |
| 1 | NO | Toner save mode is not set. | Default |

SIMULATION 26-18
TONER SAVE MODE SETTING. SELECT 0-1, AND PRESS START.
0. YES
1. NO

26-30

| Purpose | Setting |
|--------------------|---|
| Function (Purpose) | Used to set the operation mode conforming to the CE mark (Europe safety standards). (Conforming to soft start when driving the fusing heater lamp.) |
| Section | |
| Item | Specifications Operation mode (Common) |

Operation/Procedure

- 1) Select the number corresponding to the operation mode with 10-key.
- 2) Press [START] key.

| | | |
|---|-----|--|
| 0 | NO | CE mark control NO (Normal operation) |
| 1 | YES | CE mark control YES (Heater lamp soft start operation) |

(Default: 1 for Europe, 0 for the others)

SIMULATION 26-30

CE MARK CONTROL SETTING. SELECT 0-1, AND PRESS START.

0. NO

1. YES

1

26-35

| Purpose | Setting |
|--------------------|--|
| Function (Purpose) | Used to set whether the same continuous troubles are displayed as one trouble or the series of troubles with SIM 22-4 when the same troubles occur continuously. |
| Section | |
| Item | Specifications |

Operation/Procedure

- 1) Select the number corresponding to the operation mode with 10-key.
- 2) Press [START] key.

▲

| | | |
|---|------|---|
| 0 | ONCE | When two or more troubles of a same kind occur continuously, the troubles are displayed as one trouble in the trouble history of SIM22-4. |
| 1 | ANY | When two or more troubles of a same kind occur continuously, the troubles are displayed straightly as two or more troubles in the trouble history of SIM22-4. |

(Default: 0)

SIMULATION 26-35

TROUBLE MEMORY MODE SETTING. SELECT 0-1, AND PRESS START.

0. ONCE

1. ANY

1

26-38

▲

| Purpose | Setting |
|--------------------|--|
| Function (Purpose) | Used to set CONTINUE/STOP of printing when maintenance timing is over and the count value reaches 110% of replacement timing (life). |
| Section | Other |
| Item | Specifications |

Operation/Procedure

- 1) Select the number corresponding to the operation mode with 10-key.
- 2) Press [START] key.

| | | |
|---|----------------|----------------|
| 0 | PRINT CONTINUE | Print continue |
| 1 | PRINT STOP | Print stop |

(Default: 0)

SIMULATION 26-38

LIFE OVER SETTING. SELECT 0-1, AND PRESS START.

0. PRINT CONTINUE

1. PRINT STOP

1

26-41

| Purpose | Setting |
|--------------------|---|
| Function (Purpose) | Used to set YES/NO of the automatic magnification ratio selection (AMS) in the pamphlet mode. |
| Section | |
| Item | Specifications Operation mode (Common) |

Operation/Procedure

- ▲ 1) Enter the number corresponding to whether AMS operation is automatically performed or nor in the center binding mode with the 10-key.
- 2) Press [START] key.

▲

| | | |
|---|-----|---------------------------|
| 0 | NO | AMS/APS selection allowed |
| 1 | YES | AMS is forcibly operated. |

(Default: 1 for Europe and UK, 0 for the others)

SIMULATION 26-41

PAMPHLET MODE AMS SETTING. SELECT 0-1, AND PRESS START.

0. NO

1. YES

1

26-50

| Purpose | Setting |
|--------------------|---|
| Function (Purpose) | Black-White reverse YES/NO setting |
| Section | |
| Item | Specifications Operation |

Operation/Procedure

- 1) Select ENABLE/DISABLE of the B/W reverse mode with 10-key.
- 2) Press [START] key.

| | | | |
|---|---------|--------------------------|---------|
| 0 | DISABLE | B/W reverse mode DISABLE | |
| 1 | ENABLE | B/W reverse mode ENABLE | Default |

SIMULATION 26-50

B/W REVERSE MODE SETTING. SELECT 0-1, AND PRESS START.

0. DISABLE

1. ENABLE

1

26-52

| Purpose | Setting |
|--------------------|--|
| Function (Purpose) | Used to set whether non-print paper (insertion paper, cover paper) (blank image print paper) is counted up or not. |
| Section | Paper transport (Discharge/Switchback/Transport) |
| Item | Specifications Operation mode |

Operation/Procedure

- 1) Select YES/NO of the non-print paper count-up with 10-key.
- 2) Press [START] key.

Non-print paper means an insert paper (without copying) in the OHP insertion mode, a cover (without copying) in the cover insertion mode, back surface, and white paper in the duplex exit mode (CA, etc.).

| | | |
|---|------------------|-------------|
| 0 | NO (NO COUNT UP) | No count up |
| 1 | YES (COUNT UP) | Count up |

(Default: 0 for Japan and Australia, 1 for the other)

The target counters are as follows:

- Copies counter
- Printer counter
- Department management counter
- ▲ Total counter
- Effective paper counter

SIMULATION 26-52
 BLANK PAPER COUNT UP SETTING. SELECT 0-1, AND PRESS START.
 0. NO (NO COUNT UP)
 1. YES (COUNT UP)

1

26-68

| Purpose | Setting |
|---------------------------|---|
| Function (Purpose) | Used to set ENABLE/DISABLE of the CA key cancel function of print stop. |
| Section | |
| Item | Specifications Operation |

Operation/Procedure

- 1) Select ENABLE/DISABLE of the CA key cancel function of print stop with 10-key.
- 2) Press [START] key.

| | | |
|---|---------------------|---------|
| 0 | DISABLE | Disable |
| 1 | ENABLE (PRINT STOP) | Enable |

(Default: 1)

SIMULATION 26-68
 CA KEY CANCEL MODE SETTING. SELECT 0-1, AND PRESS START.
 0. DISABLE
 1. ENABLE (PRINT STOP)

0

27

27-1

| Purpose | Setting |
|---------------------------|--|
| Function (Purpose) | Used to set the specifications for operations in case of communication trouble between the host computer and MODEM (machine side). (When communication trouble occurs between the host computer MODEM and the machine, the self diag display (U7-00) is printed and setting for inhibition of print or not is made.) |
| Section | Communication unit (TEL/LIU/MODEM etc.) |
| Item | Specifications Operation mode |

Operation/Procedure

- 1) Select the number corresponding to the operation mode with 10-key.
- 2) Press [START] key.

| | | |
|---|-----|---|
| 0 | YES | Though a communication trouble occurs between the host computer and the MODEM (machine side), there is no effect on the machine operations. |
| 1 | NO | When a communication trouble occurs between the host computer and the MODEM (machine side), the self diag display (U7-00) is displayed and printing is inhibited. |

(Default: 0)

SIMULATION 27-1
 DISABLING OF U7-00 TROUBLE. SELECT 0-1, AND PRESS START.
 0. YES
 1. NO

1

27-5

| Purpose | Setting |
|---------------------------|--|
| Function (Purpose) | Used to enter the machine tag No. (This function allows to check the tag No. of the machine with the host computer.) |
| Section | Communication unit (TEL/LIU/MODEM etc.) |
| Item | Specifications Operation mode |

Operation/Procedure

- 1) Enter the tag number with 10-key.
- 2) Press [START] key.

SIMULATION 27-5
 TAG # SETTING. INPUT VALUE, AND PRESS START.
 PRESENT: 00010000
 NEW: 00009999

30

30-1

| Purpose | Operation test/Check |
|---------------------------|---|
| Function (Purpose) | Used to check the operation of sensors and detectors in other than the paper feed section and the operations of the related circuits. |
| Section | |
| Item | Operation |

Operation/Procedure

The operating conditions of sensors and detectors are displayed.
 The active sensors and detectors are highlighted.

| | |
|---------|--|
| PFD2 | ADU paper feed detection 2 |
| PPD | Resist roller front paper detection |
| PSD | Drum rear paper detection |
| POD1 | After-fusing transport detection 1 |
| POD2 | After-fusing transport detection 2 |
| POD3 | Paper full detection |
| DSW_R | Manual feed door open detection |
| DSW_L | Cabinet open detection |
| DSW_F | Front cabinet open detection |
| DSW_DSK | Desk door open detection |
| TFSD | Toner remaining quantity detection (Motor rotation number count) |
| THPS2 | Transfer belt separation home sensor 2 |
| LPPD | LCC paper transport detection |
| T1PPD | Tandem tray 1 paper transport sensor |

SIMULATION 30-1
 SENSOR CHECK. .
 PFD2 PPD PSD POD1 POD2
 POD3 DSW_R DSW_L DSW_F
 DSW_DSK TFSD THPS2 LPPD T1PPD

30-2

| | |
|--------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of sensors and detectors in the paper feed section and the related circuits. |
| Section | Paper feed |
| Item | Operation |

Operation/Procedure

The operating conditions of sensors and detectors are displayed.
The active sensors and detectors are highlighted.

| | |
|---|--|
| TANSET | Tray 1 and 2 insertion detection |
| TLUD1 | Tray 1 upper limit sensor |
| TSPD1 | Tray 1 remaining quantity sensor |
| TPED1 | Tray 1 paper sensor |
| TLUD2 | Tray 2 upper limit sensor |
| TSPD2 | Tray 2 remaining quantity sensor |
| TPED2 | Tray 2 paper sensor |
| MPLD1 | Manual feed length detection 1 |
| MPLD2 | Manual feed length detection 2 |
| MTOP1 | Manual pull-out sensor 1 |
| MTOP2 | Manual pull-out sensor 2 |
| MPED | Manual feed paper empty detection 2 |
| MPFD1 | Detection 1 of paper pass from manual paper feed |
| MPFD2 | Detection 2 of paper pass from manual paper feed |
| MPRD1 | Manual relay paper detection 1 |
| MPRD2 | Manual relay paper detection 2 |
| Bypass Tray size: (The manual feed tray detection size is displayed.) | |
| M1PFD | Tray 3 transport detection |
| M1LUD | Tray 3 upper limit detection |
| M1PED | Tray 3 paper empty detection |
| M1SS1 | Tray 3 rear edge switch 1 |
| M1SS2 | Tray 3 rear edge switch 2 |
| M1SS3 | Tray 3 rear edge switch 3 |
| M1SS4 | Tray 3 rear edge switch 4 |
| M1SPD | Tray 3 paper remaining quantity detection |
| Tray 3 size: (The tray 3 detection size is displayed.) | |
| M2PFD | Tray 4 transport detection |
| M2LUD | Tray 4 upper limit detection |
| M2PED | Tray 4 paper empty detection |
| M2SS1 | Tray 4 rear edge switch 1 |
| M2SS2 | Tray 4 rear edge switch 2 |
| M2SS3 | Tray 4 rear edge switch 3 |
| M2SS4 | Tray 4 rear edge switch 4 |
| M2SPD | Tray 4 paper remaining quantity detection |
| Tray 4 size: (The tray 4 detection size is displayed.) | |

```
SIMULATION 30-2
TRAY SENSOR CHECK..
TANSET TLUD1 TSPD1 TPED1 TLUD2 TSPD2 TPED2
MPLD1 MPLD2 MTOP1 MTOP2 MPED MPFD1 MPFD2
MPRD1 MPRD2
(Bypass Tray size: A3)
M1PFD M1LUD M1PED M1SS M1SS2 M1SS3 M1SS4
M1SPD
(Tray3 size: A3)
M2PFD M2LUD M2PED M2SS M2SS2 M2SS3 M2SS4
M2SPD
(Tray4 size: A3)
```

40

40-1

| | |
|--------------------|---|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the manual feed tray paper size detector and the related circuit. (The operation of the manual feed tray paper size detector can be monitored with the LCD display.) |
| Section | Paper feed |
| Item | Operation |

Operation/Procedure

The operating conditions of sensors and detectors are displayed.
The active sensors and detectors are highlighted.
The paper width size detection level is displayed.

| | |
|------------------------|---|
| MPLD1 | Manual tray length detection 1 |
| MPLD2 | Manual tray length detection 2 |
| MTOP1 | Manual tray pull-out detection 1 |
| MTOP2 | Manual tray pull-out detection 2 |
| BYPASS_WIDTH | Manual feed guide plate position |
| BYPASS_AD | Manual feed width detection volume output AD value |
| Bypass Tray width size | (Manual tray detection size is displayed.) A4/A3, 11 x, B5/B4, 8.5 x , A4R, B5R, A5R, 5.5x, 7.25x, EXTRA |

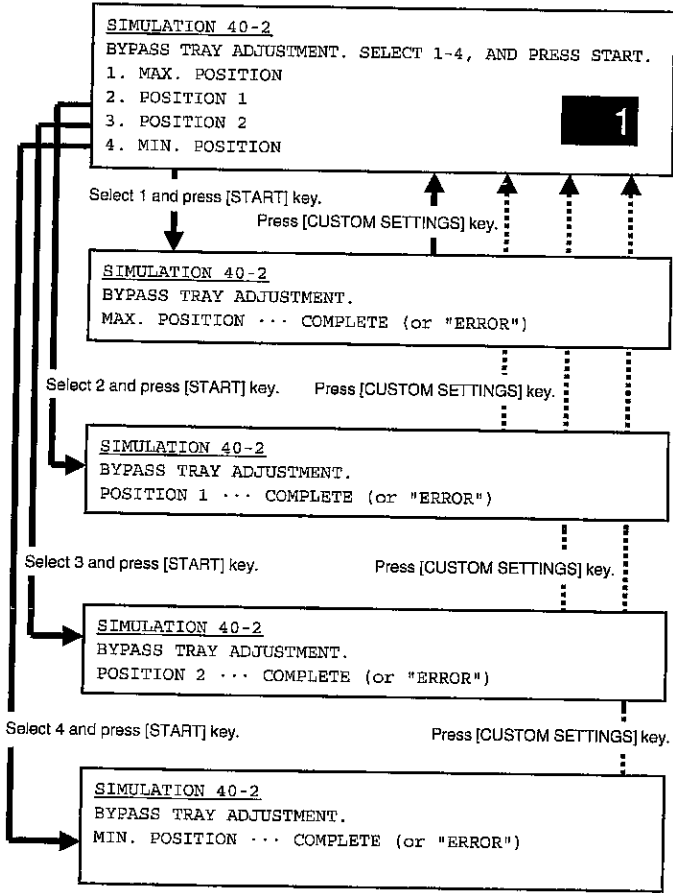
```
SIMULATION 40-1
BYPASS TRAY SENSOR CHECK..
MPLD1 MPLD2 MTOP1 MTOP2
BYPASS_WIDTH: 2100 BYPASS_AD: 600
(Bypass Tray width size: A4/A3)
```

40-2

| | |
|--------------------|---|
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the manual paper feed tray paper width detector detection level. |
| Section | Paper feed |
| Item | Operation |

Operation/Procedure

- 1) Open the manual paper feed guide to the max. width.
 - 2) Select MAX POSITION with 10-key.
 - 3) Press [START] key.
The max. width detection level is recognized.
 - 4) Press [CUSTOM SETTINGS] key.
 - 5) Set the manual paper feed guide to A4R size width.
 - 6) Select POSITION with 10-key.
 - 7) Press [START] key.
The A4R width detection level is recognized.
 - 8) Press [CUSTOM SETTINGS] key.
 - ▲ 9) Set the manual paper feed guide to A5/A5R size width.
 - 10) Select POSITION2 with 10-key.
 - 11) Press [START] key.
 - ▲ The A5/A5R width detection level is recognized.
 - 12) Press [CUSTOM SETTINGS] key.
 - 13) Open the manual paper feed guide to the min. width.
 - 14) Select MIN POSITION with 10-key.
 - 15) Press [START] key.
The min. width detection level is recognized.
- If the above procedures are not completed normally, "ERROR" is displayed. If completed normally, "COMPLETE" is displayed.



| | |
|--------------------|--|
| 40-7 | |
| Purpose | Adjustment/Setup |
| Function (Purpose) | Used to enter the manual paper feed tray paper width adjustment value. |
| Section | Paper feed |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the set item with 10-key.
- 2) Press [START] key.
- 3) Enter the set value with 10-key.
- 4) Press [START] key.

| | | |
|---|---------------|--------------------|
| 1 | MAX. POSITION | Max. width |
| 2 | POSITION 1 | Adjustment point 1 |
| 3 | POSITION 2 | Adjustment point 2 |
| 4 | MIN. POSITION | Min. value |

SIMULATION 40-7
BYPASS TRAY VALUE SETTING. SELECT 1-4, AND PRESS START.
1. MAX. POSITION : 72
2. POSITION 1 : 380
3. POSITION 2 : 710
4. MIN. POSITION : 804

Press [START] key. Press [CUSTOM SETTINGS] key.

SIMULATION 40-7
BYPASS TRAY VALUE SETTING. INPUT VALUE 0-1023, AND PRESS START.
1. MAX. POSITION 72

| | |
|--------------------|--|
| 40-11 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the multi-purpose tray width detection adjustment value. |
| Section | Paper feed |
| Item | Operation |

Operation/Procedure

The operating conditions of sensors and detectors are displayed.
The active sensors and detectors are highlighted.
The paper width detection level is also displayed.

| | |
|------------------|--|
| M1SS1 | Tray 3 size detection 1 |
| M1SS2 | Tray 3 size detection 2 |
| M1SS3 | Tray 3 detection size 3 |
| M1SS4 | Tray 3 size detection 4 |
| TRAY3_WIDTH | Tray 3 guide plate position |
| TRAY3_AD | Tray 3 width detection volume output AD value |
| Tray3 width size | (Tray 3 width direction detection size is displayed.) A4/A3, 11X, B5/B4, 8.5X, A4R, B5R, A5R, 5.5X, 7.25X, EXTRA |

SIMULATION 40-11
TRAY3 SENSOR CHECK..
M1SS1 M1SS2 M1SS3 M1SS4
TRAY3 WIDTH: 2100 TRAY3_AD: 600
{Tray3 width size: A4/A3}

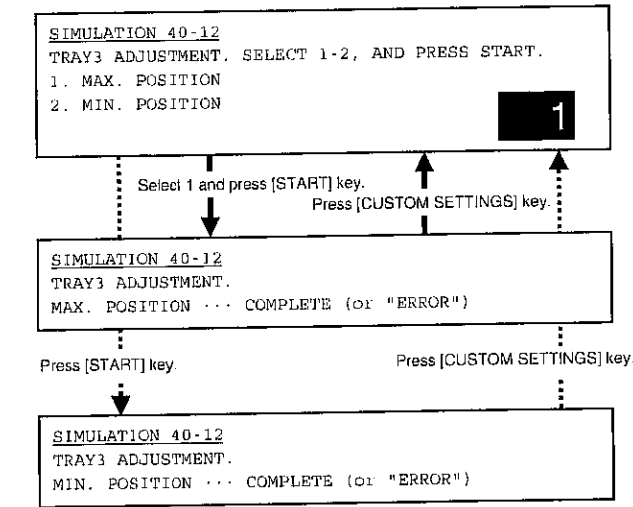
| | |
|--------------------|--|
| 40-12 | |
| Purpose | Adjustment/Setup |
| Function (Purpose) | Used to check the multi-purpose tray width detection adjustment value. |
| Section | Paper feed |
| Item | Operation |

Operation/Procedure

- 1) Open the paper feed tray 2 paper feed guide to the max. width position.
- 2) Select MAX POSITION with 10-key.
- 3) Press [START] key.
The max. width detection level is recognized.
- 4) Press [CUSTOM SETTINGS] key.
- 5) Open the paper feed tray 3 paper feed guide to the min. width position.
- 6) Select MIN POSITION with 10-key.
- 7) Press [START] key.
The min. width detection level is recognized.

If the above procedures are not completed normally, "ERROR" is displayed. If completed normally, "COMPLETE" is displayed.

41



| | |
|--------------------|---|
| 41-1 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the document size sensor and the related circuit. (The operation of the document size sensor can be monitored with the LCD display.) |
| Section | Other |
| Item | Operation |

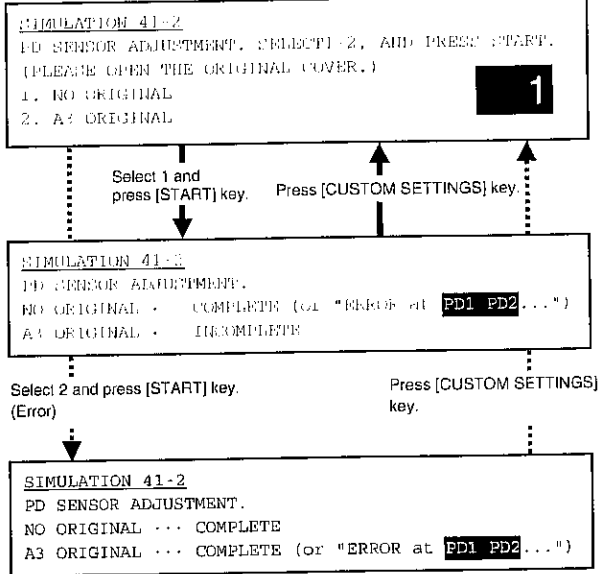
Operation/Procedure
The operating conditions of sensors and detectors are displayed.
The active sensors and detectors are highlighted.

| | | |
|---------|----------------------------------|--|
| OCSW | Document cover status | Open: Normal display Close: Highlighted |
| PD1 - 7 | Document detection sensor status | No document: Normal display Document present: Highlighted |

SIMULATION 41-1
PD SENSOR CHECK..
OCSW PD1 PD2 PD3 PD4 PD5 PD6 PD7

| | |
|--------------------|--|
| 41-2 | |
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the document size sensor sensing level. |
| Section | Other |
| Item | Operation |

Operation/Procedure
1) Open the document cover and select NO ORIGINAL with 10-key without placing any document on the document table.
2) Press [START] key.
The sensor level is set without document on the document table.
3) Place an A3 document on the document table, and select A3 ORIGINAL with 10-key.
4) Press [START] key.
The sensor level is set when detection the document.
If the above procedures are not completed normally, "ERROR" is displayed. If completed normally, "COMPLETE" is displayed.



| | |
|--------------------|---|
| 41-3 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the document size sensor and the related circuit. (The document size sensor output level can be monitored with the LCD display.) |
| Section | Other |
| Item | Operation |

Operation/Procedure
The detection output level (A/D value) of the document sensors (PD1 - PD7) is displayed in real time.
* The value in [] on the side of each sensor name indicates the threshold value.
The light receiving value (A/D value) and the threshold value (A/D value) of PD1 - PD7 are in the range of 1 - 255. The default of threshold value is 128.

| | | |
|---------|--|--|
| OCSW | Original cover status | Open: Normal display Close: Highlighted |
| PD1 - 7 | PD sensor detection level! The value in [] indicates the adjustment threshold value (SIM41-2 adjustment value). | |

SIMULATION 41-3
PD SENSOR DATA DISPLAY.
OCSW
PD1[128]: 200 PD2[128]: 200
PD3[128]: 50 PD4[128]: 52
PD5[128]: 51 PD6[128]: 50
PD7[128]: 52

43

| | |
|--------------------|--|
| 43-1 | |
| Purpose | Setting |
| Function (Purpose) | Used to set the fusing temperature in each operation mode. |
| Section | Fixing (Fusing) |
| Item | Operation |

Operation/Procedure
1) Select the number corresponding to the setting mode with 10-key.
2) Press [START] key.
3) Press [CUSTOM SETTINGS] key.

4) Press [START] key.

| Item | | | Japan | Inch series | AB series |
|------|-----------------|------------------------------------|-------|-------------|-----------|
| 1 | INSIDE NORMAL | Fusing roller inside/normal mode | 185 | 200 | 205 |
| 2 | OUTSIDE NORMAL | Fusing roller outside/normal mode | 185 | 200 | 205 |
| 3 | INSIDE PREHEAT | Fusing roller inside/preheat mode | 140 | 170 | 170 |
| 4 | OUTSIDE PREHEAT | Fusing roller outside/preheat mode | 140 | 170 | 170 |
| 5 | LEFT NORMAL | Sub-heat roller/normal mode | 185 | 200 | 205 |
| 6 | LEFT PREHEAT | Sub-heat roller/preheat mode | 140 | 170 | 170 |

SIMULATION 43-1
FUSER TEMPERATURE SET. SELECT 1-6, AND PRESS START.
1. INSIDE NORMAL 200 5. LEFT NORMAL 200
2. OUTSIDE NORMAL 200 6. LEFT PREHEAT 170
3. INSIDE PREHEAT 170
4. OUTSIDE PREHEAT 170

Press [START] key. Press [CUSTOM SETTINGS] key.

SIMULATION 43-1
FUSER TEMPERATURE SET. INPUT VALUE, AND PRESS START.
1. INSIDE NORMAL

200

43-3

| Purpose | Setting (Adjustment) |
|--------------------|----------------------------|
| Function (Purpose) | Fusing roller RPM setting. |
| Section | Fixing (Fusing) |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the adjustment item with 10-key.
- 2) Press [START] key.
- 3) Enter the setting (adjustment) value with 10-key.
- 4) Press [START] key.

Unless special measures are required, do not change the setting values below.

| Item | Set range | Default | |
|------------|-----------|------------------------|------------|
| | | AR-M550N/U, AR-M620N/U | AR-M700N/U |
| 1 NORMAL | 0 ~ 99 | 36 | 35 |
| 2 SLOWDOWN | 0 ~ 99 | 46 | 44 |

SIMULATION 43-3
FUSER MOTOR SPEED SETTING. SELECT 1-2, AND PRESS START.
1. NORMAL 36
2. SLOWDOWN 46

Press [START] key. Press [CUSTOM SETTINGS] key.

SIMULATION 43-3
FUSER MOTOR SPEED SETTING. INPUT VALUE, AND PRESS START.
1. NORMAL

36

44

44-1

| Purpose | Setting |
|--------------------|---|
| Function (Purpose) | Used to set enable/disable of correction operations in the image forming (process) section. |
| Section | Image process (Photoconductor/Developing/Transfer/Cleaning) |
| Item | Operation |

Operation/Procedure

- ▲ 1) Each bit (7 kinds) is assigned to each correction item to set ENABLE/DISABLE of the operation.
Each bit is assigned with 0 or 1 value. Enter the total values of items which are desired to be valid with the 10-key.

2) Press [START] key.

| Item | | | Default |
|------|---|---|---------|
| BIT1 | OPC drum membrane decrease (sensitivity/potential) correction | Laser power/main charger grid voltage | 1 |
| BIT2 | The range of the toner patch making voltage in the developing bias voltage/main charger grid voltage correction is specified. (Voltage limit) | Developing bias/main grid voltage (adjusted by SIM 8-1 and 8-2) ±100v | 1 |
| BIT3 | For humidity correction | Toner concentration correction | 1 |
| BIT4 | Toner concentration correction | When the developing bias/main charger grid voltage correction is changed more than the specified level, the toner concentration control level is corrected. | 1 |
| BIT5 | Toner concentration correction B | Correction for the developer life | 0 |
| BIT6 | Toner concentration correction C | Toner concentration correction in low density image continuous print | 1 |
| BIT7 | OPC drum for environment correction | | 1 |

NOTE: Set to 222.

When bit=1, correction is made.

| | | | | | | | | | | | | | | | |
|-----|----|----|----|----|----|----|---|---|-----|--------|--------|--------|----------|---------|------|
| Bit | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Env | Tcon_C | Tcon_B | Tcon_A | Humidity | Pcon_lm | Drum |

NOTE: BIT0 is not displayed, but set to the developing bias correction function.

This setting is forcibly made enable, and cannot be disabled.

SIMULATION 44-1
PROCESS CORRECTION VALUE SETTING. INPUT VALUE 0-999 AND PRESS START.
BIT1: DRUM
BIT2: PROCON_LM BIT3: HUMIDITY
BIT4: TONERCON_A BIT5: TONERCON_B
BIT6: TONERCON_C BIT7: ENVIRONMENT

223

44-2

| Purpose | Adjustment |
|--------------------|--|
| Function (Purpose) | Used to perform the gain adjustment (image density sensor LED current adjustment) of the image density sensor and the gain adjustment (OPC drum marking sensor LED current adjustment) of the OPC drum marking sensor. |
| Section | Image process (Photoconductor) |
| Item | Operation |

Operation/Procedure

Press [START] key, and the adjustment is automatically performed. When the adjustment is completed, the adjustment result is displayed. If the adjustment is not completed normally, "ERROR" is displayed. When an error occurs, the adjustment result is not revised.

| | |
|-------|---|
| DMLED | Drum marking sensor gain adjustment |
| PCLED | Image density sensor gain adjustment value |
| DRUM | Kind of the drum 0 = Other 1 = SHARP drum |

SIMULATION 44-2
PROCON GAIN ADJUSTMENT. PRESS START.
DMLED: 0
PCLED: 0
DRUM : 0

Press [START] key.

SIMULATION 44-2
PROCON GAIN ADJUSTMENT. EXECUTING...
DMLED: 0
PCLED: 0
DRUM : 1

The gain adjustment is completed.

Press [CUSTOM SETTINGS] key.

SIMULATION 44-2
PROCON GAIN ADJUSTMENT. COMPLETE.
DMLED: 0
PCLED: 0
DRUM : 1

44-4

| Purpose | Setting |
|--------------------|---|
| Function (Purpose) | Used to set the target density level in the image density correction. |
| Section | Image process (Photoconductor/Developing) |
| Item | Operation |

Operation/Procedure

- 1) Enter the target density level in the image density correction with 10-key.
- 2) Press [START] key.

SIMULATION 44-4
PROCON INITIAL DENSITY SETUP. PRESS START.
1.PROCON INI DENSITY 02

Press [START] key.

Press [CUSTOM SETTINGS] key.

SIMULATION 44-4
PROCON INITIAL DENSITY SETUP. INPUT VALUE 0-255, AND PRESS START.
1.PROCON INI DENSITY 32

44-5

| Purpose | Setting |
|--------------------|--|
| Function (Purpose) | Used to set the reference developing bias voltage, the reference main charger grid voltage, and the laser power in the image density correction. |
| Section | Image process (Photoconductor/Developing) |
| Item | Operation |

Operation/Procedure

- 1) Select the number corresponding to the setting mode with 10-key.
- 2) Press [START] key.
- 3) Enter the set value.
- 4) Press [START] key.

| | Item | Default |
|---|---------------|---|
| 1 | GRID BIAS VOL | Main charger voltage for developing bias voltage correction 350 |
| 2 | DEVE BIAS VOL | Reference developing bias voltage for developing bias voltage correction 150 |
| 3 | LASER POWER | Reference laser power for developing bias voltage correction 50 |

SIMULATION 44-5
PROCESS CONTROL TEST. SELECT 1-6, AND PRESS START.
1.GRID BIAS VOL 350
2.DEVE BIAS VOL 150
3.LASER POWER 50

Press [START] key.

Press [CUSTOM SETTINGS] key.

SIMULATION 44-5
PROCESS CONTROL TEST. INPUT VALUE 0-, AND PRESS START.
1.GRID BIAS VOL 350

44-9

| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
|--------------------|--|
| Function (Purpose) | Used to check the data related to the image forming section correction (process correction) result (corrected main charger grid voltage, the developing bias voltage, and the laser power voltage in each print mode). (This simulation allows to check that correction is performed normally or not.) |
| Section | Image process (Photoconductor/Developing/Transfer/Cleaning) |
| Item | Data Operation data (Machine condition) |

Operation/Procedure

| | Item | NOTE |
|---|--------------------|---|
| ▲ | DRUM ROTATION TIME | OPC drum rotation time (sec) Reset by SIM 24-11. |
| ▲ | DEVE MIXING TIME | Developing roller rotation time (sec) Reset by SIM 24-11. |
| | DRUM | OPC drum identification code 1: For AR620/550/625/555 0: For other than AR620/550/625/555 |
| | GR BS | Actual main charger grid voltage (including correction) / Main charger grid voltage adjusted with SIM 8-2 |
| | DV BS | Actual developing bias voltage (including correction) / Developing bias voltage adjusted with SIM 8-1 |

| Item | NOTE |
|---------------|--|
| LD ADJ | Actual laser power beam (Including correction) |
| AUTO | Auto copy mode |
| CHARA | Text copy mode |
| CHARA P | Text/Photo copy mode |
| PHOTO | Photo copy mode |
| PRT | Printer mode |
| DESTINATION 1 | Toner destination code stored in the main unit |
| DESTINATION 2 | Toner destination code stored in the toner bottle CRUM chip |

SIMULATION 44-9

PROCESS CONTROL DATA DISPLAY.

DRUM ROTATION TIME: 01234567(sec)

DEVE MIXING TIME: 01234567(sec)

DRUM: 0

| | GR_BS | DV_BS | LD_ADJ |
|---------------|---------|---------------|---------|
| AUTO | 000/000 | 000/000 | 000/000 |
| CHARA | 000/000 | 000/000 | 000/000 |
| CHARA_P | 000/000 | 000/000 | 000/000 |
| PHOTO | 000/000 | 000/000 | 000/000 |
| PRT | 000/000 | 000/000 | 000/000 |
| DESTINATION1: | 0 | DESTINATION2: | 0 |

44-12

| | |
|-------------------------------|--|
| Purpose | Adjustment/Setup/Operation data output/Check (Display) |
| Function (Purpose) | Used to display sampling toner image patch density data in image density correction. (Used to check that the correction is performed normally or not.) |
| Section | Image process (Photoconductor/Developing) |
| Item | Operation |

Operation/Procedure

| | |
|-----------|---|
| DMLED | OPC drum marking sensor LED current adjustment value |
| PC LED | OPC drum marking sensor LED current adjustment value |
| END DV BS | Developing bias voltage when making PT2/BS2 of ID (1) |
| ID (n) | Indicates the toner patch making procedures. |
| PT1/BS1 | Toner patch density detection level/OPC drum surface detection level when the developing bias is 0V - 50V. |
| PT2/BS2 | Toner patch density detection level/OPC drum surface detection level when the developing bias is 0V. |
| PT3/BS3 | Toner patch density detection level/OPC drum surface detection level when the developing bias is 0V + 50V. |

SIMULATION 44-12

DM DATA, PATCH/BASE DATA DISPLAY.

DMLED: 000 PC LED: 000 END DV_BS: 000

| | PT1/BS1 | PT2/BS2 | PT3/BS3 |
|--------|---------|---------|---------|
| ID(1): | 000/000 | 000/000 | 000/000 |
| ID(2): | 000/000 | 000/000 | 000/000 |
| ID(3): | 000/000 | 000/000 | 000/000 |
| ID(4): | 000/000 | 000/000 | 000/000 |
| ID(5): | 000/000 | 000/000 | 000/000 |
| ID(6): | 000/000 | 000/000 | 000/000 |
| ID(7): | 000/000 | 000/000 | 000/000 |
| ID(8): | 000/000 | 000/000 | 000/000 |

44-14

| | |
|-------------------------------|--|
| Purpose | Adjustment/Setup/Operation data output/Check (Display) |
| Function (Purpose) | Used to check the output level of the temperature sensor and the humidity sensor. |
| Section | Image process (Photoconductor/Developing) |
| Item | Operation |

Operation/Procedure

The output levels of the temperature sensor and the humidity sensor in the developing unit are displayed.

| | | |
|-------------------|---|---------|
| TH-DV (Not used) | Developing section temperature sensor | 0 - 255 |
| TH-RA (Not used) | Room temperature sensor | 0 - 255 |
| TH-CL | Process section temperature sensor | 0 - 255 |
| TH-EX | Paper discharging section temperature sensor | 0 - 255 |
| HUS-DV | Developing section humidity sensor | 0 - 255 |
| HUS-TC (Not used) | Process section humidity sensor | 0 - 255 |

SIMULATION 44-14

SENSOR DATA DISPLAY MONITOR.

TH-DV: 255

TH-RA: 255

TH-CL: 255

TH-EX: 255

HUS-DV: 255

HUS-TC: 255

44-16

| | |
|-------------------------------|---|
| Purpose | Adjustment/Setup/Operation data output/Check (Display) |
| Function (Purpose) | Used to check the toner concentration control data. |
| Section | Image process (Developing) |
| Item | Operation |

Operation/Procedure

| | |
|----------------------|--|
| HUMIDITY AREA | Humidity area |
| INT HUMIDITY AREA | Humidity area when setting the toner concentration control level (SIM 25-2) |
| TARGET LEVEL | Current toner concentration control level |
| DEV REF | Toner concentration when setting the toner concentration control level (SIM 25-2) |
| HUMIDITY (TARGET) | Toner concentration correction value for humidity |
| A | Toner concentration correction value for change in developing bias voltage |
| B | Toner concentration value for developer life |

SIMULATION 44-16

TONER CONTROL STANDARD LEVEL DISPLAY.

HUMIDITY AREA: 01

INT HUMIDITY AREA: 01

TARGET LEVEL = DEV REF + HUM (TARGET) + A + B

146 = 128 + 10 (12) + 8 + 0

46

46-2

| | |
|-------------------------------|--|
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the copy density in all the copy modes (Auto, Text, Text/Photo, and Photo mode). |
| Section | |
| Item | Picture quality Density |

Operation/Procedure

- 1) Select the number corresponding to the copy mode to be adjusted
with 10-key. (Select one of 3 - 6.)
- 2) Press [START] key.
- 3) Enter the copy density level with 10-key.

| Item | | | Set range | Default |
|------|-------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 99 | 50 |
| 1 | COPY START | Copy START (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |
| 3 | AE 3.0 | AE mode | | |
| 4 | CH 3.0 | Text mode 3.0 | | |
| 6 | PHOTO 3.0 | Photo mode 3.0 | | |

- 4) Press P key or [START] key.
 The adjustment value is set.
 When [START] key is pressed, copying is performed and the adjustment value is simultaneously set.
 Check the density of the printed copy image.

| | | |
|----------------|-------------|--------------|
| Normal display | | NOW COPYING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

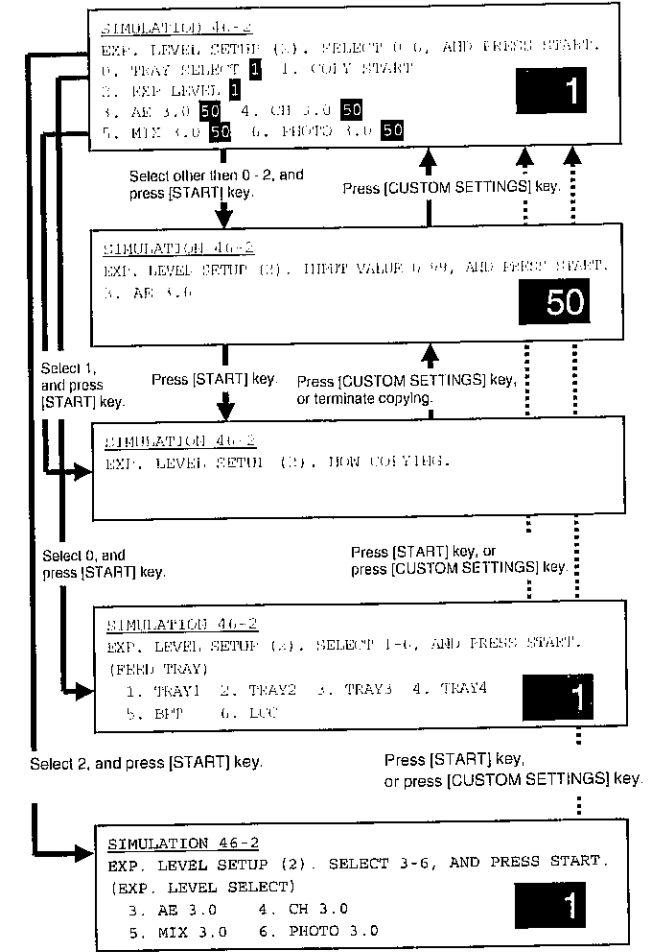
NOTE: When the copy image density is adjusted with this simulation, the copy image densities of all the copy modes are changed to the copy image density level set with this simulation.
 That is, the copy image density of each copy mode set with SIM 46-9, 10, 11 is changed to the copy image density level adjusted with this simulation.

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



| 46-9 | |
|--------------------|---|
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the print density for each density level (display value) in the copy mode (binary - Text mode). An optional print density can be set for each density level (display value). |
| Section | |
| Item | Picture quality Density |

Operation/Procedure

- 1) Select the number corresponding to the copy density adjustment level with 10-key. (Select one of 3 - 11.)
- 2) Press [START] key.
- 3) Enter the copy density level with 10-key.

| Item | | | Set range | Default |
|------|-------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 99 | 50 |
| 1 | COPY START | Copy START (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |
| 3 | 1.0 | Exposure level 1.0 | | |
| 4 | 1.5 | Exposure level 1.5 | | |
| 5 | 2.0 | Exposure level 2.0 | | |
| 6 | 2.5 | Exposure level 2.5 | | |
| 7 | 3.0 | Exposure level 3.0 | | |
| 8 | 3.5 | Exposure level 3.5 | | |
| 9 | 4.0 | Exposure level 4.0 | | |
| 10 | 4.5 | Exposure level 4.5 | | |
| 11 | 5.0 | Exposure level 5.0 | | |

- 4) Press [P] key or [START] key.
The adjustment value is set.
When [START] key is pressed, copying is performed and the adjustment value is set simultaneously.
Check the density of printed copy image.

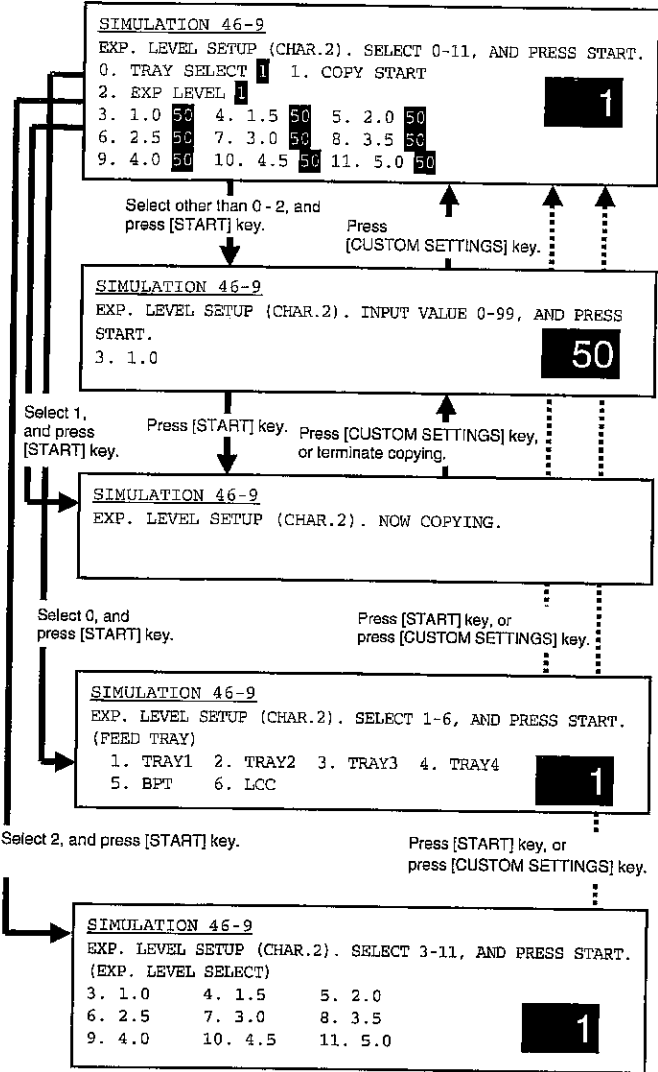
| | | |
|----------------|-------------|--------------|
| Normal display | | NOW COPYING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



| | |
|--------------------|---|
| 46-10 | |
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the print density for each density level (display value) in the copy mode (binary - Text/Photo mode). An optional print density can be set for each density level (display value). |
| Section | |
| Item | Picture quality |

Operation/Procedure

- 1) Select the number corresponding to the copy density adjustment level with 10-key. (Select one of 3 - 11.)
- 2) Press [START] key.
- 3) Enter the copy density level with 10-key.

| Item | | | Set range | Default |
|------|-------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 99 | 50 |
| 1 | COPY START | Copy START (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |
| 3 | 1.0 | Exposure level 1.0 | | |
| 4 | 1.5 | Exposure level 1.5 | | |
| 5 | 2.0 | Exposure level 2.0 | | |
| 6 | 2.5 | Exposure level 2.5 | | |
| 7 | 3.0 | Exposure level 3.0 | | |
| 8 | 3.5 | Exposure level 3.5 | | |
| 9 | 4.0 | Exposure level 4.0 | | |
| 10 | 4.5 | Exposure level 4.5 | | |
| 11 | 5.0 | Exposure level 5.0 | | |

- 4) Press [P] key or [START] key.
The adjustment value is set.
When [START] key is pressed, copying is performed and the adjustment value is set simultaneously.
Check the density of printed copy image.

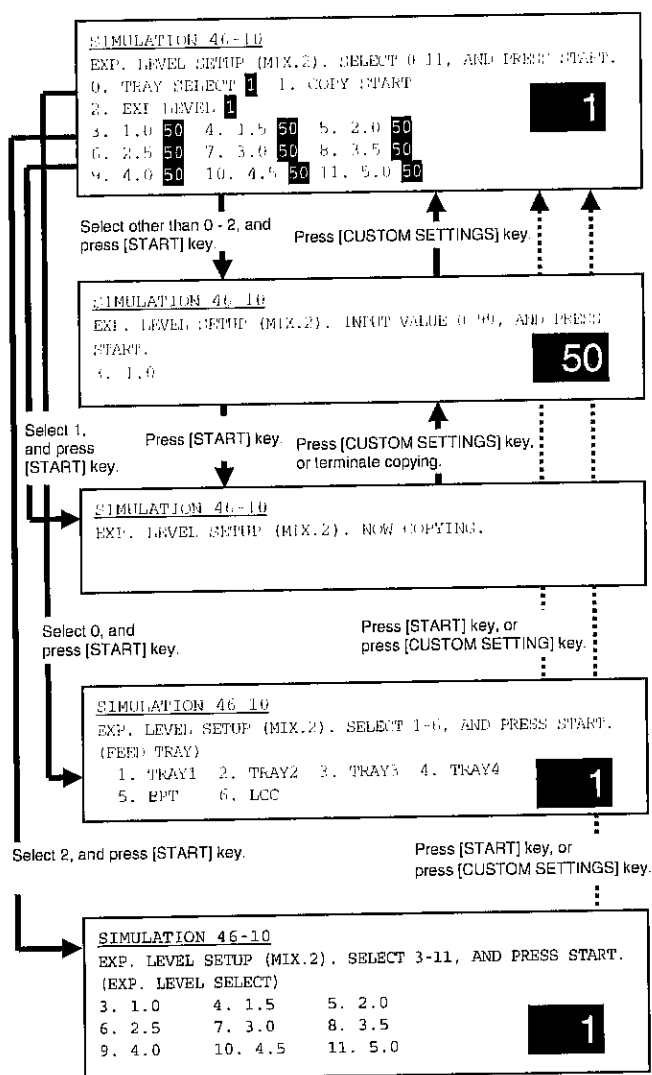
| | | |
|----------------|-------------|--------------|
| Normal display | | NOW COPYING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



46-11

| Purpose | Adjustment |
|---------------------------|--|
| Function (Purpose) | Used to adjust the print density for each density level (display value) in the copy mode (binary - Photo mode). An optional print density can be set for each density level (display value). |
| Section | |
| Item | Picture quality Density |

Operation/Procedure

- 1) Select the number corresponding to the copy density adjustment level with 10-key. (Select one of 3 - 11.)
- 2) Press [START] key.
- 3) Enter the copy density level with 10-key.

| Item | | | Set range | Default |
|------|-------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 99 | 50 |
| 1 | COPY START | Copy START (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |
| 3 | 1.0 | Exposure level 1.0 | | |
| 4 | 1.5 | Exposure level 1.5 | | |
| 5 | 2.0 | Exposure level 2.0 | | |
| 6 | 2.5 | Exposure level 2.5 | | |
| 7 | 3.0 | Exposure level 3.0 | | |
| 8 | 3.5 | Exposure level 3.5 | | |
| 9 | 4.0 | Exposure level 4.0 | | |
| 10 | 4.5 | Exposure level 4.5 | | |
| 11 | 5.0 | Exposure level 5.0 | | |

- 4) Press [P] key or [START] key.
The adjustment value is set.
When [START] key is pressed, copying is performed and the adjustment value is set simultaneously.
Check the density of printed copy image.

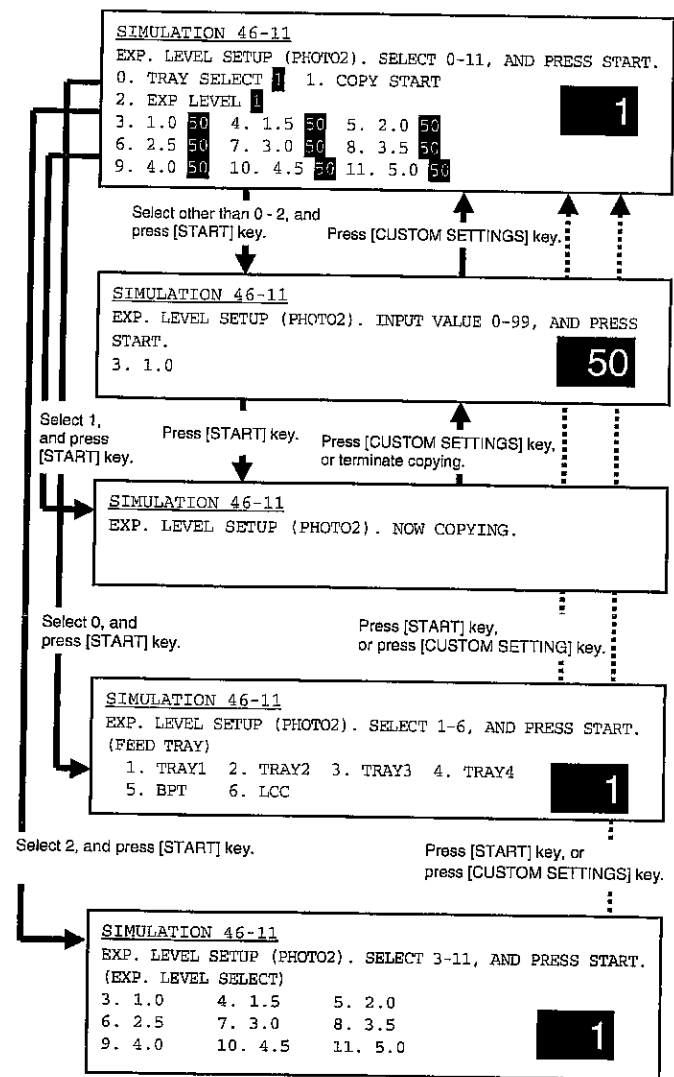
| | | |
|----------------|-------------|--------------|
| Normal display | | NOW COPYING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



| | |
|---------------------------|---|
| 46-12 | |
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the print density in the FAX mode (all modes). |
| Section | |
| Item | Picture quality |

Operation/Procedure

- 1) Select the adjustment item of FAX EXP. LEVEL with 10-key.
- 2) Press [START] key.
- 3) Enter the print density level with 10-key.

| Item | | | Set range | Default |
|------|----------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 99 | 50 |
| 1 | COPY START | Copy START (Default) | | |
| 2 | FAX EXP. LEVEL | FAX mode print density | | |

- 4) Press [P] key or [START] key.
The adjustment value is set.
When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.
Check the density of printed image.

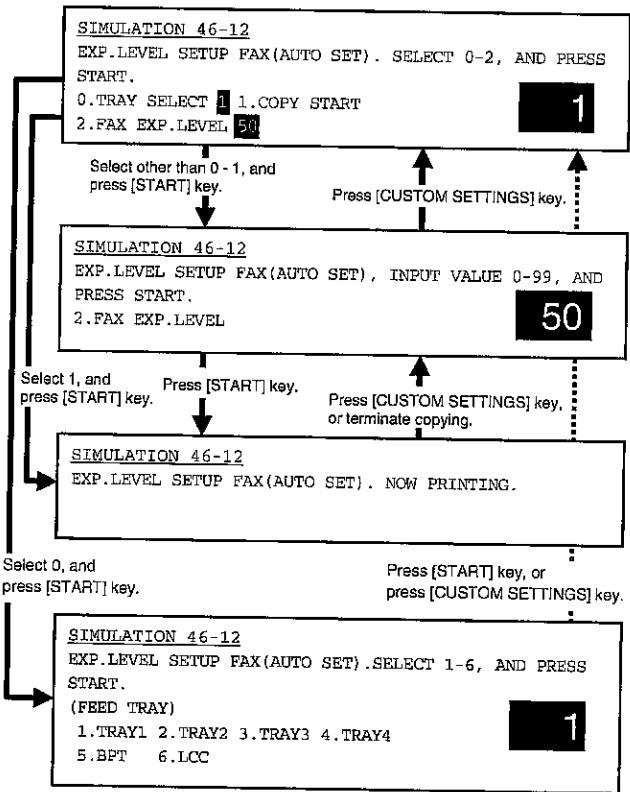
| | | |
|----------------|-------------|---------------|
| Normal display | | NOW PRINTING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

NOTE: When the FAX print image density is adjusted with this simulation, the print image densities of all the FAX modes are changed to the image density level set with this simulation. That is, the print image density of each FAX mode set with SIM 46-13, 14, 15 is changed to the print image density level adjusted with this simulation.

- To select paper (paper feed tray), perform the following procedures.
- 1) Enter 0 with 10-key.
 - 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
 - 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
 - 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



| | |
|---------------------------|--|
| 46-13 | |
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the print density in the FAX mode (each normal mode). (Only when FAX is installed.) |
| Section | |
| Item | Picture quality |

Operation/Procedure

- 1) Select the number corresponding to one of the following adjustment items with 10-key.
 - * Manual mode (Print density adjustment level)
 - * Auto mode
- 2) Press [START] key.
- 3) Enter the print density level with 10-key.

| | Item | | Set range | Default |
|---|-------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 99 | 50 |
| 1 | PRINT START | Print start (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |
| 3 | AUTO | Auto | | |
| 4 | 1.0 | Exposure level 1 | | |
| 5 | 2.0 | Exposure level 2 | | |
| 6 | 3.0 | Exposure level 3 | | |
| 7 | 4.0 | Exposure level 4 | | |
| 8 | 5.0 | Exposure level 5 | | |

- 4) Press [P] key or [START] key.
 The adjustment value is set.
 When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.
 Check the density of printed image.

| | | |
|----------------|-------------|---------------|
| Normal display | | NOW PRINTING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

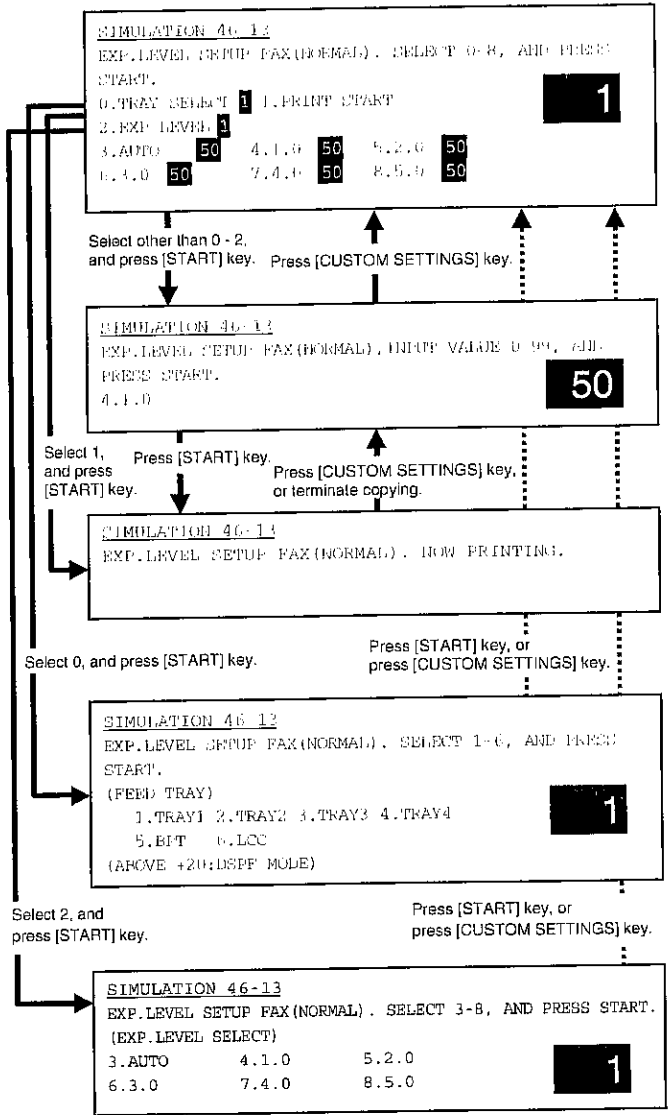
To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

When the sum of the above set value (1 - 6) and 20 is set, the mode is changed to the duplex print mode.

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



| | |
|---------------------------|--|
| 46-14 | |
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the print density in the FAX mode (each fine mode). (Only when FAX is installed.) |
| Section | |
| Item | Picture quality |

Operation/Procedure

- 1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 3 - 14.)
 - * Normal mode (Print density adjustment level)
 - * Normal mode (Print density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)

2) Enter the print density level with 10-key.

| Item | | | Set range | Default |
|------|-------------|------------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 99 | 50 |
| 1 | PRINT START | Print start (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |
| 3 | AUTO | Auto | | |
| 4 | 1.0 | Exposure level 1 | | |
| 5 | 2.0 | Exposure level 2 | | |
| 6 | 3.0 | Exposure level 3 | | |
| 7 | 4.0 | Exposure level 4 | | |
| 8 | 5.0 | Exposure level 5 | | |
| 9 | AUTO (H) | Auto (Half-tone) | | |
| 10 | 1.0 (H) | Exposure level 1 (Half-tone) | | |
| 11 | 2.0 (H) | Exposure level 2 (Half-tone) | | |
| 12 | 3.0 (H) | Exposure level 3 (Half-tone) | | |
| 13 | 4.0 (H) | Exposure level 4 (Half-tone) | | |
| 14 | 5.0 (H) | Exposure level 5 (Half-tone) | | |

3) Press [P] key or [ATART] key.

The entered value is set.

When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.

Check the density of print image.

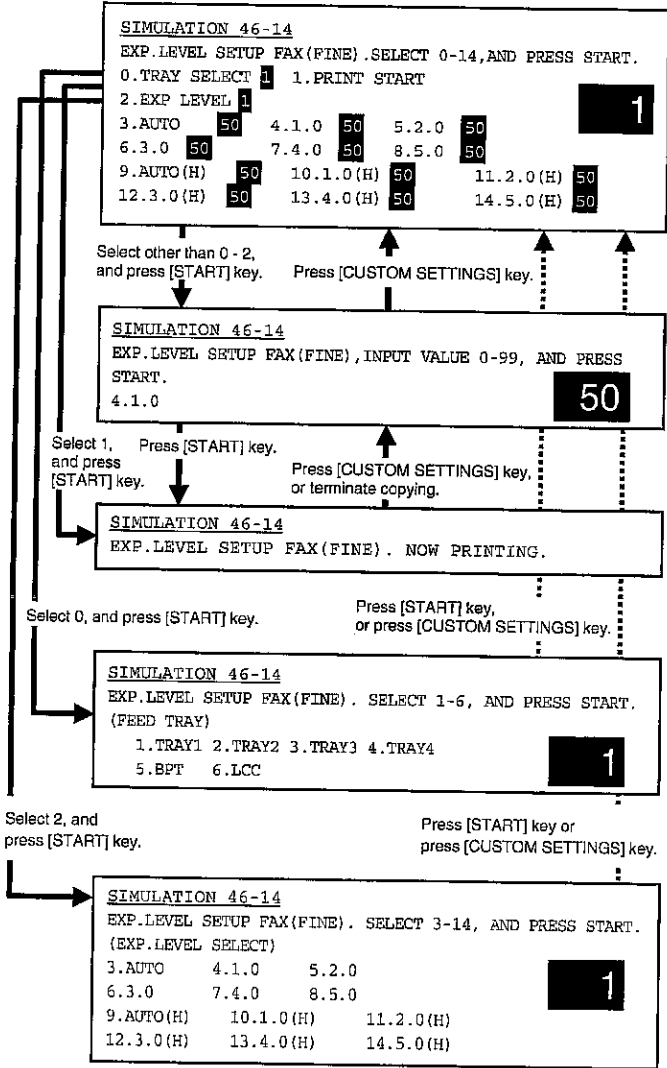
| | | |
|----------------|-------------|---------------|
| Normal display | | NOW PRINTING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



| | |
|--------------------|--|
| 46-15 | |
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the print density in the FAX mode (each super fine mode). (Only when FAX is installed.) |
| Section | |
| Item | Picture quality |

Operation/Procedure

- 1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 3 - 14.)
 - * Normal mode (Print density adjustment level)
 - * Normal mode (Print density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)
- 2) Press [START] key.

| Purpose | Adjustment |
|--------------------|--|
| Function (Purpose) | Used to adjust the print density in the FAX mode (each ultra fine mode). (Only when FAX is installed.) |
| Section | |
| Item | Picture quality |

Operation/Procedure

- 1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 3 - 14.)
 - * Normal mode (Print density adjustment level)
 - * Normal mode (Print density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)
- 2) Press [START] key.
- 3) Enter the print density level with 10-key.

| | Item | Set range | Default |
|----|-------------|------------------------------|--------------|
| 0 | TRAY SELECT | Paper feed tray selection | |
| 1 | PRINT START | Print start (Default) | |
| 2 | EXP LEVEL | Exposure level selection | |
| 3 | AUTO | Auto | 0 - 99 50 |
| 4 | 1.0 | Exposure level 1 | |
| 5 | 2.0 | Exposure level 2 | |
| 6 | 3.0 | Exposure level 3 | |
| 7 | 4.0 | Exposure level 4 | |
| 8 | 5.0 | Exposure level 5 | |
| 9 | AUTO (H) | Auto (Half-tone) | |
| 10 | 1.0 (H) | Exposure level 1 (Half-tone) | |
| 11 | 2.0 (H) | Exposure level 2 (Half-tone) | |
| 12 | 3.0 (H) | Exposure level 3 (Half-tone) | |
| 13 | 4.0 (H) | Exposure level 4 (Half-tone) | |
| 14 | 5.0 (H) | Exposure level 5 (Half-tone) | |

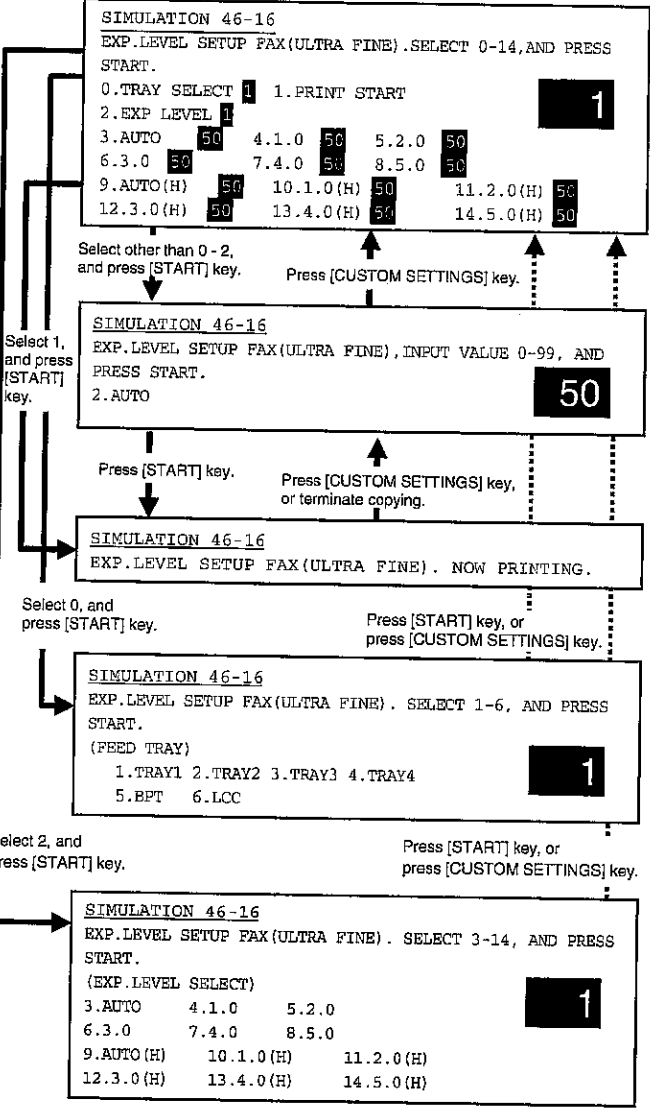
- 4) Press [P] key or [START] key.
The entered value is set.
When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.
Check the density of print image.

| | | |
|----------------|-------------|---------------|
| Normal display | | NOW PRINTING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

- To select paper (paper feed tray), perform the following procedures.
- 1) Enter 0 with 10-key.
 - 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
 - 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
 - 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.

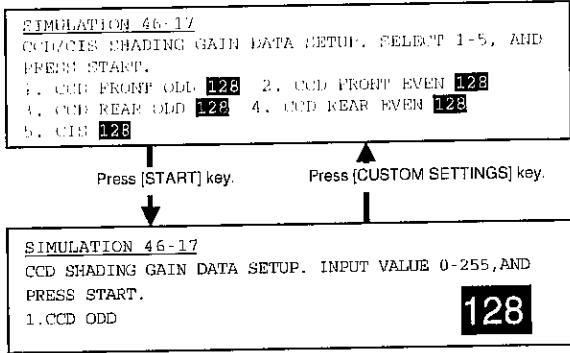


| Purpose | Setting |
|--------------------|---|
| Function (Purpose) | Used to set the gain in shading correction. |
| Section | Optical (Image scanning) |
| Item | Operation |

Operation/Procedure

- 1) Enter the number corresponding to the adjustment item
 - 2) Press [START] key.
 - 3) Enter the shading gain change value with 10-key.
 - 4) Press [START] key.
- There is normally no need to change the shading gain with this simulation.
- Only when the scanned image density is unsatisfactory though shading is performed, the above procedure is performed.

| | Item | Set range | Default |
|---|----------------|-----------|---------|
| 1 | CCD FRONT ODD | 0 - 255 | 112 |
| 2 | CCD FRONT EVEN | | |
| 3 | CCD REAR ODD | | |
| 4 | CCD REAR EVEN | | |
| 5 | CIS | | 128 |



46-18

| Purpose | Adjustment |
|--------------------|---|
| Function (Purpose) | Used to adjust the gamma (density gradient) in the copy mode. |
| Section | |
| Item | Picture quality Density |

Operation/Procedure

(Copy mode selection)

- 1) Select the number corresponding to the copy mode to be adjusted with 10-key. (Select one of 3 - 14.)
- 2) Press [START] key.

(Print mode selection in the FAX mode)

- 1) Enter 2 with 10-key.
- 2) Press [START] key.
- 3) Select the number corresponding to one of the following adjustment items. (Select one of 3 - 14.)
 - * Normal mode (Print density adjustment level)
 - * Normal mode (Print density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)

| Item | | | Set range | Default |
|------|-------------|---------------------------|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 127 | 64 |
| 1 | PRINT START | Print start (Default) | | |
| 2 | EXP LEVEL | Exposure level selection | | |
| 3 | OC_AE | AE mode (OC) | | |
| 4 | OC_CHARA | Text mode (OC) | | |
| 5 | OC_MIX | Text/Photo mode (OC) | | |
| 6 | OC_PHOTO | Photo mode (OC) | | |
| 7 | SPF_AE | AE mode (SPF) | | |
| 8 | SPF_CHARA | Text mode (SPF) | | |
| 9 | SPF_MIX | Text/Photo mode (SPF) | | |
| 10 | SPF_PHOTO | Photo mode (SPF) | | |
| 11 | CIS_AE | AE mode (CIS) | | |
| 12 | CIS_CHARA | Text mode (CIS) | | |
| 13 | CIS_MIX | Text/Photo mode (CIS) | | |
| 14 | CIS_PHOTO | Photo mode (CIS) | | |

Exposure level

| Item | | |
|------|----------|------------------------------|
| 3 | AUTO | Auto |
| 4 | 1.0 | Exposure level 1 |
| 5 | 2.0 | Exposure level 2 |
| 6 | 3.0 | Exposure level 3 |
| 7 | 4.0 | Exposure level 4 |
| 8 | 5.0 | Exposure level 5 |
| 9 | AUTO (H) | Auto (Half-tone) |
| 10 | 1.0 (H) | Exposure level 1 (Half-tone) |
| 11 | 2.0 (H) | Exposure level 2 (Half-tone) |
| 12 | 3.0 (H) | Exposure level 3 (Half-tone) |
| 13 | 4.0 (H) | Exposure level 4 (Half-tone) |
| 14 | 5.0 (H) | Exposure level 5 (Half-tone) |

- 4) Press [START] key.

| | | |
|----------------|-------------|---------------|
| Normal display | | NOW PRINTING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

(Gamma adjustment)

After completion of the above procedures, perform the following procedures.

- 1) Enter the gamma level with 10-key.
- 2) Enter [P] key or [CUSTOM SETTINGS] key.
 When [START] key is pressed, printing is performed and the adjustment value is set simultaneously.
 Check the gamma density (copy density in the low density area and the high density area) of printed copy image. The greater the adjustment value is, the greater the gamma value is, resulting in a higher contrast.

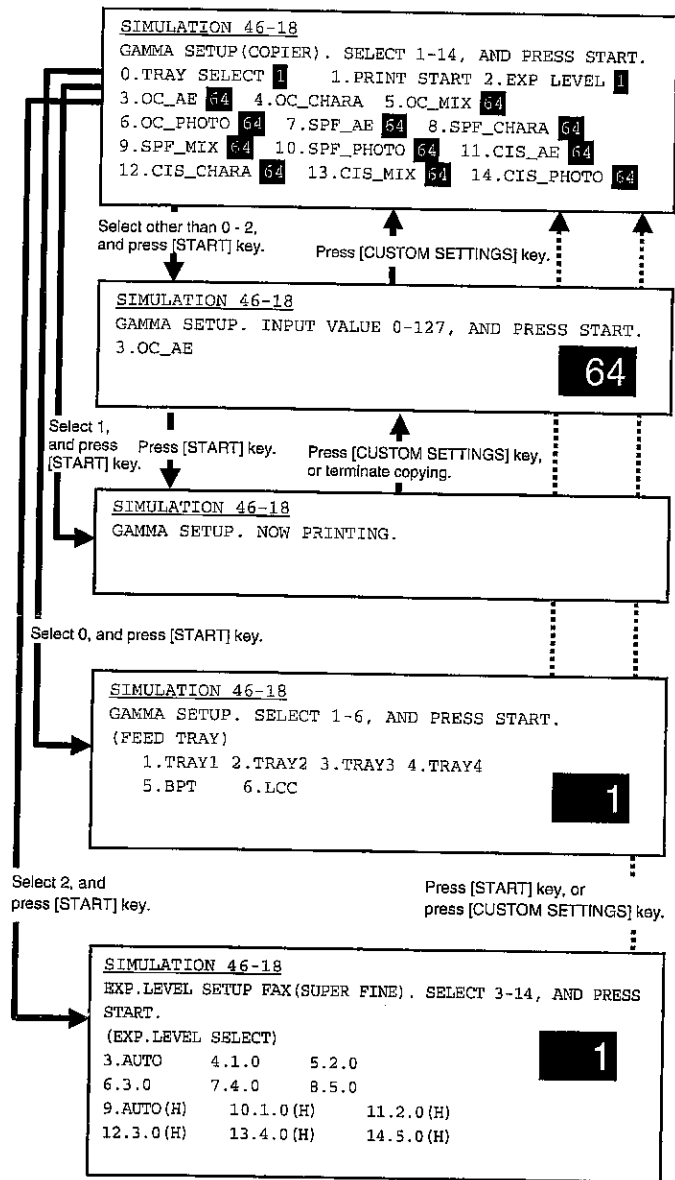
(Copy condition setting in this simulation)

To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.



| | |
|---------------------------|--|
| 46-19 | |
| Purpose | Adjustment |
| Function (Purpose) | Used to set the auto mode operation specifications in each mode (copy, scan, FAX). |
| Section | |
| Item | Picture quality Density |

Operation/Procedure

(Toner save operation YES/NO setting in the auto mode)

- 1) Select "1. AE MODE" with 1-key.
- 2) Press [START] key.
- 3) Select the number corresponding to the operation specifications with 10-key.
- 4) Press [START] key.

When [START] key is pressed, the adjustment value is set.

(Operation setting in the auto copy mode)

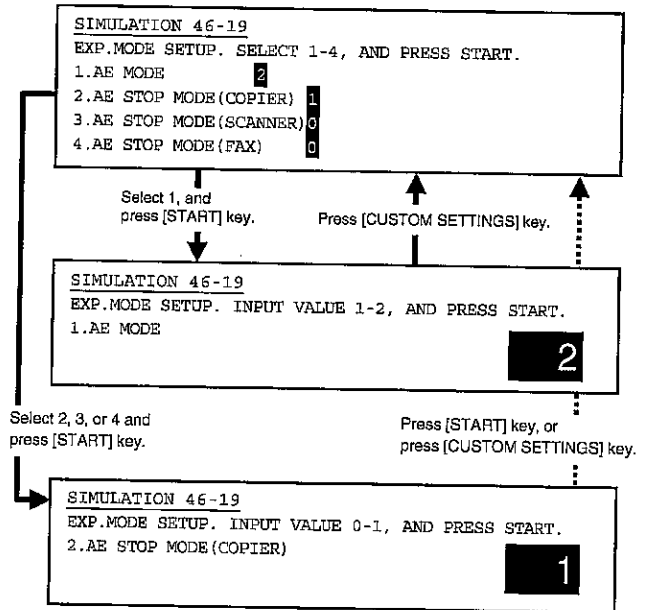
- 1) Select the number corresponding to the mode with 10-key. (Select one of 2 - 4.)
- 2) Press [START] key.
- 3) Select the number corresponding to the operation mode with 10-key.
- 4) Press [START] key.

| | | |
|---|------------------------|-------------------------|
| 1 | AE MODE | AE mode |
| 2 | AE STOP MODE (COPIER) | AE fixed mode (Copier) |
| 3 | AE STOP MODE (SCANNER) | AE fixed mode (Scanner) |
| 4 | AE STOP MODE (FAX) | AE fixed mode (FAX) |

| Mode | Set value | Item | Default |
|---------------|-----------|--|-------------------------------|
| AE mode | 1 | Image quality priority mode (Normal mode) * Gamma is sharp to provide high contrast images. | 1 (Japan) 2 (EX Japan) |
| | 2 | Toner consumption priority mode * Gamma is mild to provide low contrast images. | |
| AE fixed mode | 0 | AE fixed OFF | 1 (COPIER) 0 (SCANNER/FAX) |
| | 1 | AE fixed ON | |

AE fixed OFF: The automatic density (exposure) control is performed in real time. (The density level is changed in real time according to the document pattern.)

AE fixed ON: The density at the lead edge of the document is scanned, and the overall density (exposure) level is determined according to the scanned density level. (Overall density level fixed)



| | |
|---------------------------|---|
| 46-20 | |
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the copy density correction in the SPF copy mode for the document table copy mode. The adjustment is made so that the copy density becomes the same as that of the document table copy mode. |
| Section | SPF |
| Item | Picture quality Density |

Operation/Procedure

(Adjustment mode selection)

- 1) Select the number corresponding to the copy mode to be adjusted with 10-key.
SPF front frame side (Front surface copy), SPF rear frame side (Front surface copy), SPF (Back surface copy) (Select one of 3 - 5.)
- 2) Press [SATART] key.

(Copy density level adjustment)

- 1) Enter the density correction value with 10-key.
- 2) Press [P] key or [START] key.

(Copy condition setting in this simulation)

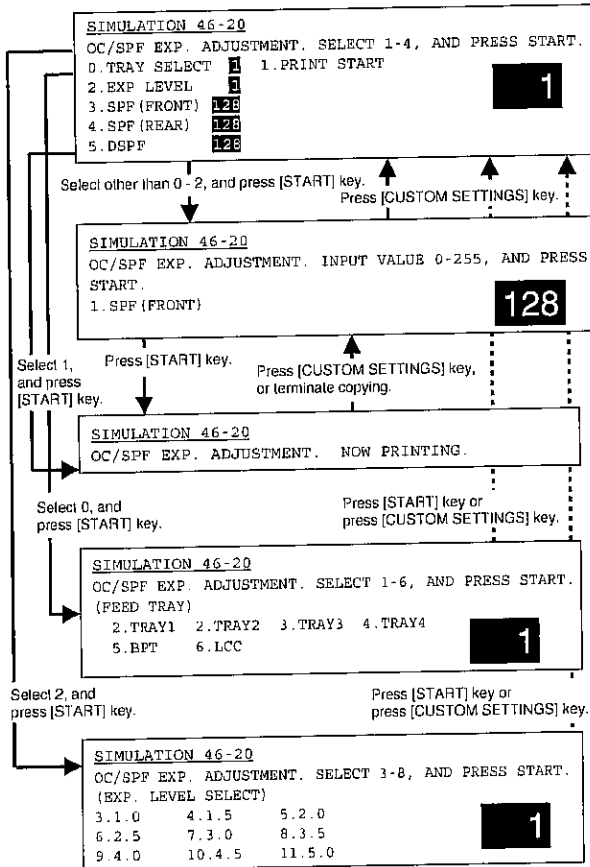
To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

NOTE: When [P] key is pressed after entering an adjustment value in this simulation, the adjustment value is set. When START key is pressed, the adjustment value is set and copying is performed.

| Item | Content | Set range | Default |
|------|--|-----------|---------|
| 0 | TRAY SELECT Paper feed tray selection 1: TRAY1 2: TRAY2 3: TRAY3 4: TRAY4 5: Manual feed 6: Side LCC | — | — |
| 1 | PRINT START Print start (Default) | — | — |
| 2 | EXP LEVEL Exposure level selection 3: Exposure level 1.0 4: Exposure level 1.5 5: Exposure level 2.0 6: Exposure level 2.5 7: Exposure level 3.0 8: Exposure level 3.5 9: Exposure level 4.0 10: Exposure level 4.5 11: Exposure level 5.0 | — | — |
| 3 | SPF (FRONT) SPF (front) (front frame side) | 0 - 255 | 128 |
| 4 | SPF (REAR) SPF (front) (rear frame side) | | |
| 5 | DSPF DSPF (Back surface) | | |

- "Set value - 128" is added to the shading adjustment value (SIM 46-17).



46-21

| Purpose | Adjustment |
|--------------------|---|
| Function (Purpose) | Used to adjust the scanner exposure level in all the scanner modes. |
| Section | |
| Item | Picture quality Density |

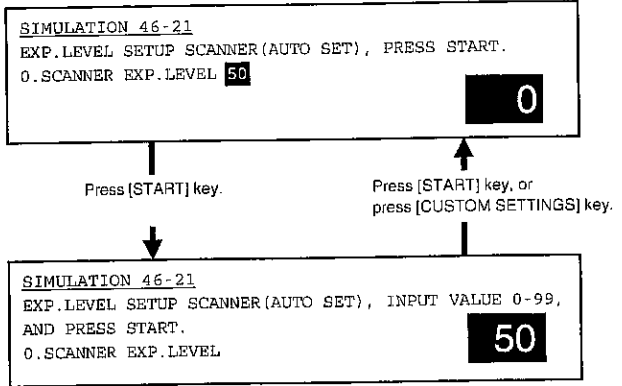
Operation/Procedure

- 1) Select "SCANNER EXP. LEVEL" with 10-key.
- 2) Press [START] key.
- 3) Enter the image density adjustment value.
- 4) Press [P] key or [START] key.

NOTE: When this simulation is performed to adjust the scan image densities, all the image densities in all the scan modes are changed to the image density level set with this simulation. That is, the image densities set with SIM 46-22, 23, 24, 25, and 45 are changed to the image density level set with this simulation.

| Item | Set range | Default |
|--|-----------|---------|
| 0 SCANNER EXP. LEVEL Image density level | 0 - 99 | 50 |

NOTE: Only the set value is changed and no printing is performed.



46-22

| Purpose | Adjustment |
|--------------------|--|
| Function (Purpose) | Used to adjust the scanner exposure level in the normal text mode. |
| Section | |
| Item | Picture quality Density |

Operation/Procedure

- 1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 5.)
 - * Normal mode (Image density adjustment level)
 - * Auto mode
- 2) Press [START] key.
- 3) Enter the image density adjustment value with 10-key.
- 4) Press [START] key or press [CUSTOM SETTINGS] key. The adjustment value is set.

| Item | Set range | Default |
|------------------------|-----------|---------|
| 0 AUTO Auto | 0 - 99 | 50 |
| 1 1.0 Exposure level 1 | | |
| 2 2.0 Exposure level 2 | | |
| 3 3.0 Exposure level 3 | | |
| 4 4.0 Exposure level 4 | | |
| 5 5.0 Exposure level 5 | | |

NOTE: Only the set value is changed and no printing is performed.

SIMULATION 46-22
EXP.LEVEL SETUP SCANNER(NORMAL). SELECT 0-5, AND PRESS START.

| | | | | | |
|--------|----|-------|----|-------|----|
| 0.AUTO | 50 | 1.1.0 | 50 | 2.2.0 | 50 |
| 3.3.0 | 50 | 4.4.0 | 50 | 5.5.0 | 50 |

1

Select other than 0-5, and press [START] key.

Press [START] key, or press [CUSTOM SETTINGS] key.

SIMULATION 46-22
EXP.LEVEL SETUP SCANNER(NORMAL). INPUT VALUE 0-99, AND PRESS START.

0.AUTO

50

46-23

| Purpose | Adjustment |
|--------------------|--|
| Function (Purpose) | Used to adjust the scanner exposure level in the fine text mode. |
| Section | |
| Item | Picture quality Density |

Operation/Procedure

- Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 11.)
 - * Normal mode (Image density adjustment level)
 - * Normal mode (Image density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)

2) Press [START] key.

3) Enter the image density adjustment value with 10-key.

4) Press [START] key or press [P] key.

The adjustment value is set.

| Item | | | Set range | Default |
|------|----------|------------------------------|-----------|---------|
| 0 | AUTO | Auto | 0 - 99 | 50 |
| 1 | 1.0 | Exposure level 1 | | |
| 2 | 2.0 | Exposure level 2 | | |
| 3 | 3.0 | Exposure level 3 | | |
| 4 | 4.0 | Exposure level 4 | | |
| 5 | 5.0 | Exposure level 5 | | |
| 6 | AUTO (H) | Auto (Half-tone) | | |
| 7 | 1.0 (H) | Exposure level 1 (Half-tone) | | |
| 8 | 2.0 (H) | Exposure level 2 (Half-tone) | | |
| 9 | 3.0 (H) | Exposure level 3 (Half-tone) | | |
| 10 | 4.0 (H) | Exposure level 4 (Half-tone) | | |
| 11 | 5.0 (H) | Exposure level 5 (Half-tone) | | |

NOTE: Only the set value is changed and no printing is performed.

SIMULATION 46-23
EXP.LEVEL SETUP SCANNER(FINE). SELECT 0-11, AND PRESS START.

| | | | | | |
|-----------|----|-----------|----|-----------|----|
| 0.AUTO | 50 | 1.1.0 | 50 | 2.2.0 | 50 |
| 3.3.0 | 50 | 4.4.0 | 50 | 5.5.0 | 50 |
| 6.AUTO(H) | 50 | 7.1.0(H) | 50 | 8.2.0(H) | 50 |
| 9.3.0(H) | 50 | 10.4.0(H) | 50 | 11.5.0(H) | 50 |

1

Select other than 0-11, and press [START] key.

Press [START] key, or press [CUSTOM SETTINGS] key.

SIMULATION 46-23
EXP.LEVEL SETUP SCANNER(FINE). INPUT VALUE 0-99, AND PRESS START.

0.AUTO

50

46-24

| Purpose | Adjustment |
|--------------------|--|
| Function (Purpose) | Used to adjust the scanner exposure level (in the super fine text mode). |
| Section | |
| Item | Picture quality Density |

Operation/Procedure

- Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 11.)
 - * Normal mode (Image density adjustment level)
 - * Normal mode (Image density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)
- Press [START] key.
- Enter the image density adjustment value with 10-key.
- Press [START] key or press [P] key.

The adjustment value is set.

| Item | | | Set range | Default |
|------|----------|------------------------------|-----------|---------|
| 0 | AUTO | Auto | 0 - 99 | 50 |
| 1 | 1.0 | Exposure level 1 | | |
| 2 | 2.0 | Exposure level 2 | | |
| 3 | 3.0 | Exposure level 3 | | |
| 4 | 4.0 | Exposure level 4 | | |
| 5 | 5.0 | Exposure level 5 | | |
| 6 | AUTO (H) | Auto (Half-tone) | | |
| 7 | 1.0 (H) | Exposure level 1 (Half-tone) | | |
| 8 | 2.0 (H) | Exposure level 2 (Half-tone) | | |
| 9 | 3.0 (H) | Exposure level 3 (Half-tone) | | |
| 10 | 4.0 (H) | Exposure level 4 (Half-tone) | | |
| 11 | 5.0 (H) | Exposure level 5 (Half-tone) | | |

NOTE: Only the set value is changed and no printing is performed.

SIMULATION 46-24
EXP.LEVEL SETUP SCANNER(SUPER FINE). SELECT 0-11, AND PRESS START.

| | | | | | |
|-----------|----|-----------|----|-----------|----|
| 0.AUTO | 50 | 1.1.0 | 50 | 2.2.0 | 50 |
| 3.3.0 | 50 | 4.4.0 | 50 | 5.5.0 | 50 |
| 6.AUTO(H) | 50 | 7.1.0(H) | 50 | 8.2.0(H) | 50 |
| 9.3.0(H) | 50 | 10.4.0(H) | 50 | 11.5.0(H) | 50 |

1

Select other than 0-11, and press [START] key.

Press [START] key, or press [CUSTOM SETTINGS] key.

SIMULATION 46-24
EXP.LEVEL SETUP SCANNER(SUPER FINE). INPUT VALUE 0-99, AND PRESS START.

0.AUTO

50

46-25

| Purpose | Adjustment |
|--------------------|--|
| Function (Purpose) | Used to adjust the scanner exposure level in the ultra fine text mode. |
| Section | |
| Item | Picture quality Density |

Operation/Procedure

- Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 11.)
 - * Normal mode (Image density adjustment level)
 - * Normal mode (Image density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)

- 2) Press [START] key.
- 3) Enter the image density adjustment value with 10-key.
- 4) Press [START] key or press [P] key.

The adjustment value is set.

| Item | | | Set range | Default |
|------|----------|------------------------------|-----------|---------|
| 0 | AUTO | Auto | 0 - 99 | 50 |
| 1 | 1.0 | Exposure level 1 | | |
| 2 | 2.0 | Exposure level 2 | | |
| 3 | 3.0 | Exposure level 3 | | |
| 4 | 4.0 | Exposure level 4 | | |
| 5 | 5.0 | Exposure level 5 | | |
| 6 | AUTO (H) | Auto (Half-tone) | | |
| 7 | 1.0 (H) | Exposure level 1 (Half-tone) | | |
| 8 | 2.0 (H) | Exposure level 2 (Half-tone) | | |
| 9 | 3.0 (H) | Exposure level 3 (Half-tone) | | |
| 10 | 4.0 (H) | Exposure level 4 (Half-tone) | | |
| 11 | 5.0 (H) | Exposure level 5 (Half-tone) | | |

NOTE: Only the set value is changed and no printing is performed.

SIMULATION 46-25
EXP.LEVEL SETUP SCANNER(ULTRA FINE). SELECT 0-11, AND PRESS START.
0.AUTO 50 1.1.0 50 2.2.0 50
3.3.0 50 4.4.0 50 5.5.0 50
6.AUTO (H) 50 7.1.0 (H) 50 8.2.0 (H) 50
9.3.0 (H) 50 10.4.0 (H) 50 11.5.0 (H) 50

Select other than 0 - 11, and press [START] key.

Press [START] key, or press [CUSTOM SETTINGS] key.

SIMULATION 46-25
EXP.LEVEL SETUP SCANNER(ULTRA FINE). INPUT VALUE 0-99, AND PRESS START.
0.AUTO 50

46-27

| Purpose | Adjustment |
|--------------------|--|
| Function (Purpose) | Used to adjust the gamma (density gradient) of the network scanner mode. |
| Section | |
| Item | Picture quality |

Operation/Procedure

(Scanner mode selection)

- 1) Select the number corresponding to the scanner mode to be adjusted with 10-key. (Select one of 1 - 9.)
- 2) Press [START] key.

(Gamma adjustment)

- 1) Enter the gamma level with 10-key.
- 2) Press [START] key.

The greater the adjustment value is, the greater the gamma is, resulting in a higher contrast.

| Item | | | Set range | Default |
|------|--------------|------------------------------|-----------|---------|
| 1 | OC_Fine.HT | Fine text (Half-tone) (OC) | 0 - 127 | 64 |
| 2 | OC_SFine.HT | Super fine (Half-tone) (OC) | | |
| 3 | OC_UFine.HT | Ultra fine (Half-tone) (OC) | | |
| 4 | SPF_Fine.HT | Fine text (Half-tone) (SPF) | | |
| 5 | SPF_SFine.HT | Super fine (Half-tone) (SPF) | | |
| 6 | SPF_UFine.HT | Ultra fine (Half-tone) (SPF) | | |
| 7 | CIS_Fine.HT | Fine text (Half-tone) (CIS) | | |
| 8 | CIS_SFine.HT | Super fine (Half-tone) (CIS) | | |
| 9 | CIS_UFine.HT | Ultra fine (Half-tone) (CIS) | | |

SIMULATION 46-27

GAMMA SETUP(SCANNER), SELECT 1-9, AND PRESS START.
1.OC_Fine.HT 64 2.OC_SFine.HT 64 3.OC_UFine.HT 64
4.SPF_Fine.HT 64 5.SPF_SFine.HT 64 6.SPF_UFine.HT 64
7.CIS_Fine.HT 64 8.CIS_SFine.HT 64 9.CIS_UFine.HT 64

46-31

| Purpose | Adjustment |
|--------------------|--|
| Function (Purpose) | Used to adjust sharpness of the copy mode. |
| Section | |
| Item | Picture quality |

Operation/Procedure

(Copy mode selection)

- 1) Select the number corresponding to the copy mode to be adjusted with 10-key. (Select one of 1 - 16.)
- 2) Press [START] key.

(Sharpness adjustment)

- 1) Enter the sharpness level with 10-key.
- 2) Press [START] key.

The greater the adjustment value is, the greater the sharpness is.

| Item | | | Set range | Default |
|------|------------|------------------------|-----------|---------|
| 1 | OC_AE | AE mode (OC) | 1 - 5 | 3 |
| 2 | OC_CHARA | Text mode (OC) | | |
| 3 | OC_MIX | Text/Photo mode (OC) | | |
| 4 | OC_PHOTO | Photo mode (OC) | | |
| 5 | SPF1_AE | AE mode (SPF1) | | |
| 6 | SPF1_CHARA | Text mode (SPF1) | | |
| 7 | SPF1_MIX | Text/Photo mode (SPF1) | | |
| 8 | SPF1_PHOTO | Photo mode (SPF1) | | |
| 9 | SPF2_AE | AE mode (SPF2) | | |
| 10 | SPF2_CHARA | Text mode (SPF2) | | |
| 11 | SPF2_MIX | Text/Photo mode (SPF2) | | |
| 12 | SPF2_PHOTO | Photo mode (SPF2) | | |
| 13 | CIS_AE | AE mode (CIS) | | |
| 14 | CIS_CHARA | Text mode (CIS) | | 4 |
| 15 | CIS_MIX | Text/Photo mode (CIS) | | 3 |
| 16 | CIS_PHOTO | Photo mode (CIS) | | |

- * SPF1: DSPF front surface (CCD)
- * SPF2: DSPF back surface (CCD)



SIMULATION 46-31

SHARPNESS LEVEL SETUP. SELECT 1-12, AND PRESS START.
1.OC_AE 3 2.OC_CHARA 3 3.OC_MIX 3
4.OC_PHOTO 3 5.SPF1_AE 3 6.SPF1_CHARA 3
7.SPF1_MIX 3 8.SPF1_PHOTO 3 9.SPF2_AE 3
10.SPF2_CHARA 3 11.SPF2_MIX 3 12.SPF2_PHOTO 3
13.CIS_AE 3 14.CIS_CHARA 4 15.CIS_MIX 3
16.CIS_PHOTO 3

Press [START] key.

Press [CUSTOM SETTINGS] key.

SIMULATION 46-31
SHARPNESS LEVEL SETUP. INPUT VALUE 0-3, AND PRESS START.
1.OC_AE 3

46-39

| | |
|---------------------------|---|
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust sharpness of the FAX mode. |
| Section | |
| Item | Picture quality |

Operation/Procedure

- 1) Enter the sharpness level with 10-key.
- 2) Press [START] key.

The greater the adjustment value is, the greater the sharpness is.
Default: 3 (Normal), 1 (Halftone)

1

SIMULATION 46-39
FAX SHARPNESS LEVEL SETUP. SELECT 1-12, AND PRESS START.

| | | |
|--------------------|--------------------|-------------------|
| 1:OC_NORMAL 3 | 2:OC_FINE 3 | 3:OC_FINE(H) 1 |
| 4:OC_SFINE 3 | 5:OC_SFINE(H) 1 | 6:OC_UFINE 3 |
| 7:OC_UFINE(H) 1 | 8:OC_600 3 | 9:OC_600(H) 3 |
| 10:SPF1_NORMAL 3 | 11:SPF1_FINE 3 | 12:SPF1_FINE(H) 1 |
| 13:SPF1_SFINE 3 | 14:SPF1_SFINE(H) 1 | 15:SPF1_UFINE 3 |
| 16:SPF1_UFINE(H) 1 | 17:SPF1_600 3 | 18:SPF1_600(H) 1 |
| 19:SPF2_NORMAL 3 | 20:SPF2_FINE 3 | 21:SPF2_FINE(H) 1 |
| 22:SPF2_SFINE 3 | 23:SPF2_SFINE(H) 1 | 24:SPF2_UFINE 3 |
| 25:SPF2_UFINE(H) 1 | 26:SPF2_600 3 | 27:SPF2_600(H) 1 |
| 28:CIS_NORMAL 3 | 29:CIS_FINE 3 | 30:CIS_FINE(H) 1 |
| 31:CIS_SFINE 3 | 32:CIS_SFINE(H) 1 | 33:CIS_UFINE 3 |
| 34:CIS_UFINE(H) 1 | 35:CIS_600 3 | 36:CIS_600(H) 1 |

Press [START] key. Press [CUSTOM SETTINGS] key.

SIMULATION 46-39
FAX SHARPNESS LEVEL SETUP. INPUT VALUE 1-3, AND PRESS START.

1:OC_NORMAL

3

46-45

| | |
|---------------------------|--|
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the image density in the FAX mode (600dpi). |
| Section | |
| Item | Picture quality |

Operation/Procedure

- 1) Select the number corresponding to one of the following adjustment items with 10-key. (Select one of 0 - 11.)
 - * Normal mode (Image density adjustment level)
 - * Normal mode (Image density adjustment level) (Half-tone mode)
 - * Auto mode
 - * Auto mode (Half-tone mode)
 - 2) Press [START] key.
 - 3) Enter the image density adjustment value with 10-key.
 - 4) Press [START] key or press [P] key.
- The adjustment value is set.

| Item | | | Set range | Default |
|------|----------|------------------------------|-----------|---------|
| 0 | AUTO | Auto | 0 - 99 | 50 |
| 1 | 1.0 | Exposure level 1 | | |
| 2 | 2.0 | Exposure level 2 | | |
| 3 | 3.0 | Exposure level 3 | | |
| 4 | 4.0 | Exposure level 4 | | |
| 5 | 5.0 | Exposure level 5 | | |
| 6 | AUTO (H) | Auto (Half-tone) | | |
| 7 | 1.0 (H) | Exposure level 1 (Half-tone) | | |
| 8 | 2.0 (H) | Exposure level 2 (Half-tone) | | |
| 9 | 3.0 (H) | Exposure level 3 (Half-tone) | | |
| 10 | 4.0 (H) | Exposure level 4 (Half-tone) | | |
| 11 | 5.0 (H) | Exposure level 5 (Half-tone) | | |

SIMULATION 46-45

EXP.LEVEL SETUP SCANNER(600dpi). SELECT 0-5,AND PRESS START.

| | | |
|--------------|--------------|--------------|
| 0.AUTO 50 | 1.1.0 50 | 2.2.0 50 |
| 3.3.0 50 | 4.4.0 50 | 5.5.0 50 |
| 6.AUTO(H) 50 | 7.1.0(H) 50 | 8.2.0(H) 50 |
| 9.3.0(H) 50 | 10.4.0(H) 50 | 11.5.0(H) 50 |

Press [START] key.

Press [CUSTOM SETTINGS] key.

SIMULATION 46-45

EXP.LEVEL SETUP SCANNER(600dpi). INPUT VALUE 0-99, AND PRESS START.

0.AUTO

50

48

48-1

| | |
|---------------------------|---|
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the copy magnification ratio (in the main scanning and the sub scanning directions). |
| Section | Optical (Image scanning) |
| Item | Picture quality |

Operation/Procedure

(Adjustment mode selection)

- 1) Select the number corresponding to the copy mode to be adjusted with 10-key. (Select one of 3 - 7.)
- 2) Press [START] key.

| Item | | | Set range | Default |
|------|---------------|---|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 0 - 99 | 50 |
| 1 | COPY START | Copy START (Default) | | |
| 2 | MAGNIFICATION | Print magnification ratio | | |
| 3 | CCD (MAIN) | SCAN main scanning magnification ratio adjustment (CCD) | | |
| 4 | CCD (SUB) | SCAN sub scanning magnification ratio adjustment (CCD) | | |
| 5 | SPF (SUB) | SPF front surface magnification ratio adjustment (Sub scan) | | |
| 6 | CIS (MAIN) | SPF back surface magnification ratio adjustment (CIS main scan) | | |
| 7 | SPF (MAIN) | SPF front surface magnification ratio adjustment (Main scan) | | |

(Copy magnification ratio adjustment)

- 1) Select the number corresponding to the copy magnification ratio adjustment mode to be adjusted with 10-key. (Select one of 3 - 7.)
 - 2) Press [START] key.
 - 3) Enter the copy magnification ratio adjustment value with 10-key.
 - 4) Press [P] key or [START] key.
- When the [START] key is pressed, copying is performed and the adjustment value is set simultaneously.
- The copy magnification ratio in the sub scan direction can be adjusted by changing the scan speed (motor RPM).

| | | |
|----------------|--------------|--------------|
| Normal display | NOW COPYING. | |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

The greater the value is, the greater the correction is. One step corresponds to 0.1% adjustment.

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray of the selected paper with 10-key. (Select one of 1 - 6.)
- 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

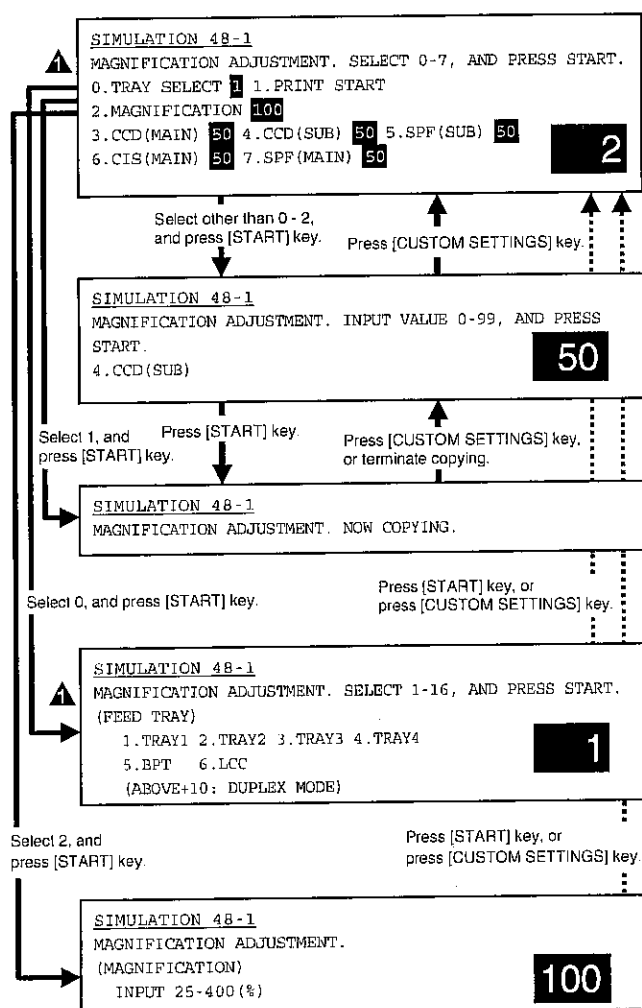
When the total of the above set value (1 - 6) and 10 is entered, the mode is changed to the duplex mode.

* The copy magnification ratio can be set with the following

- 1) Enter 2 with 10-key.
- 2) Press [START] key.
- 3) Enter the copy magnification ratio with 10-key.
- 4) Press [START] key.

| | |
|-----------|-----------|
| Set range | 25 - 400% |
|-----------|-----------|

NOTE: When [P] key is pressed after entering the adjustment value, the adjustment value is set. When [START] key is pressed instead, the adjustment value is set and copying is performed.



48-5

| Purpose | Adjustment |
|--------------------|--|
| Function (Purpose) | Used to adjust the copy magnification ratio in the sub scanning direction. |
| Section | Optical (Image scanning) |
| Item | Picture quality |

Operation/Procedure

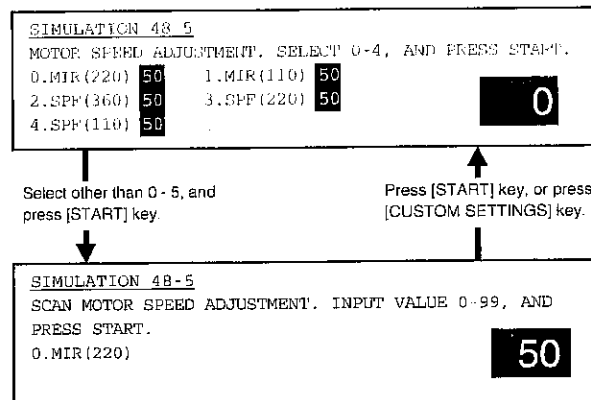
When the sub scanning direction image magnification ratio adjustment with SIM 48-1 cannot provide a satisfactory result if a different magnification ratio is set and a copy is made, perform this simulation.

When there is an error in the copy magnification ratio in reduction copy, change the adjustment value of the high speed mode. When there is an error in the copy magnification ratio in enlargement copy, change the adjustment value of the low speed mode.

- 1) Select the number corresponding to the adjustment mode with 10-key.
 - 2) Press [START] key.
 - 3) Enter the copy adjustment value with 10-key.
- The scanner/SPF motor rotation speed adjustment value is entered.

| Item | | Content | Set range | Default |
|------|-----------|--------------------------|-----------|---------|
| 0 | MIR (220) | Mirror motor (220mm/sec) | 0 - 99 | 50 |
| 1 | MIR (110) | Mirror motor (110mm/sec) | | |
| 2 | SPF (360) | SPF motor (360mm/sec) | | |
| 3 | SPF (220) | SPF motor (220mm/sec) | | |
| 4 | SPF (110) | SPF motor (110mm/sec) | | |

- 4) Press [START] key.



50

50-1

| Purpose | Adjustment |
|--------------------|---|
| Function (Purpose) | Used to adjust the copy image position and the void area (image loss) adjustment on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-5 and 50-2 (Simplified method).) (Document table mode) |
| Section | |
| Item | Picture quality Image position |

Operation/Procedure

(Lead edge image loss/void area adjustment)

- 1) Set the lead edge image loss adjustment value (LEAD EDGE) and the paper lead edge void adjustment value (DENA) as follows. (Standard set value) Lead edge image loss: 1.5mm (LEDA: 15) Paper lead edge void: 3.5mm (DENA: 35)
 - * Set LEAD to 15. (Enter 15 as the adjustment value of LEAD, and press [P] key.) (0.1mm/step)

- * Set DENA to 35. (Enter 35 as the adjustment value of DENA, and press [P] key.) (0.1mm/step)
- 2) Make a copy at the normal ratio (100%) and check the lead edge void area and the image loss. (Enter 100 as the set value of the copy magnification ratio (MAGNIFICATION), and press [START] key.)
- 3) If the adjustment result is not satisfactory, perform the following procedures.
 - * If the lead edge void are is not 3.5mm:
Change the adjustment value of RRCB and perform the adjustment. (Change the adjustment value of RRCB and press [START] key.) (1msec/step)
 - * If the lead edge image loss is not 1.5mm:
Change the adjustment value of RRCA and perform the adjustment. (Change the adjustment value of RRCA and press [START] key.)
(Shift for the adjustment value change: 0.2mm/step)

(Rear edge void area adjustment)

Adjust so that the rear edge void area is 3.5mm. (Change the adjustment value of TRAIL EDGE, and press [START] key.)

(Front/rear frame direction image loss adjustment)

Set the adjustment value of SIDE to 20. (Enter 20 as the adjustment value of SIDE, and press [P] key.)

When the adjustment value is changed, the image position is shifted in the front/rear frame direction.

(Front/rear frame direction void area adjustment)

Adjust so that the total of the front/rear direction void areas is 7.0mm. (Change the adjustment values of FRONT/REAR, and press [START] key.)

Front frame void area = 3.5mm Rear frame void area = 3.5mm

If, as shown above, the front and the rear void areas are not even, use SIM 50-5 to adjust the image off-center position.

| Item | Content | Set range | Default | |
|------------------------------|-------------------|--|-----------|----|
| 0 | TRAY SELECT | Paper feed tray selection | 1 - 6 | — |
| 1 | COPY START | Copy START (Default) | — | — |
| 2 | MAGNIFICATION | Print magnification ratio | 25 - 400% | — |
| (Lead edge adjustment value) | | | | |
| 3 | RRCA | Document scan start position | 0 - 99 | 50 |
| 4 | RRCB | Resist roller clutch ON timing adjustment value | | |
| 10 | SIDE2 ADJ. | Correction value for RRCB in the back surface print mode | 1 - 99 | 50 |
| (Image loss set value) | | | | |
| 5 | LEAD | Lead edge image loss set value | 0 - 99 | 15 |
| 6 | SIDE | Side image loss set value | | 20 |
| (Void set value) | | | | |
| 7 | LEAD_EDGE (DENA) | Lead edge void set value | 0 - 99 | 35 |
| 8 | TRAIL_EDGE (DENB) | Rear edge void adjustment value | | |
| 9 | FRONT/REAR | Front/Rear void adjustment value | | |

NOTE: When [P] is pressed after entering an adjustment value, the adjustment value is set. When [START] key is pressed instead, the adjustment value is set and copying is performed.)

| | | |
|----------------|-------------|--------------|
| Normal display | | NOW COPYING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

(Copy condition in this simulation)

* To select paper (paper feed tray), perform the following procedures.

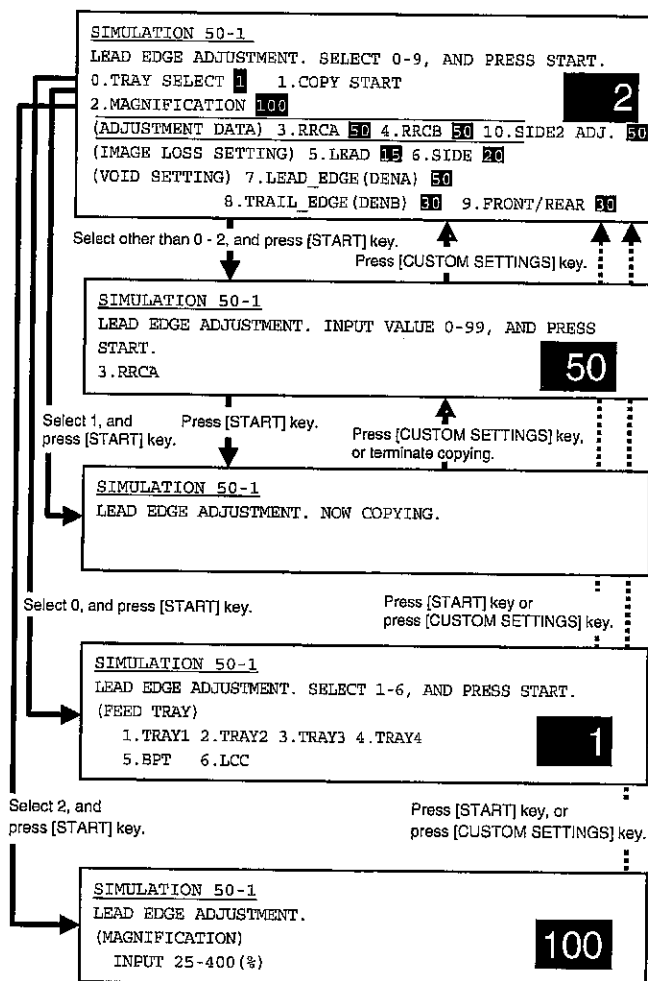
- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray of the target paper with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

* To set the magnification ratio, perform the following procedure.

- 1) Enter 2 with 10-key.
- 2) Press [START] key.
- 3) Enter the copy magnification ratio with 10-key.
- 4) Press [START] key.

| | |
|-----------|--------------|
| Set range | 25 - 400 (%) |
|-----------|--------------|



| | |
|---------------------------|--|
| 50-2 | |
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the document scan position, the image print position, and the void area (image loss). (Simple adjustment) (This adjustment is the simple method of SIM 50-1.) (Document table mode) |
| Section | |
| Item | Picture quality Image position |

Operation/Procedure

(Lead edge image loss/void area adjustment)

- 1) Set the RRGB value of SIM 50-1 to 80 - 99.
- 2) Set the lead edge image loss adjustment value (LEAD EDG) and the paper lead edge void adjustment value (DENA) to the values specified below.
(Standard set value) Lead edge image loss: 1.5mm
Paper lead edge void: 3.5mm (DENA: 35)
 - * Set the adjustment value of LEAD to 15. (Enter 15 as the adjustment value of LEAD and press [P] key.)
 - * Set the adjustment value of DENA to 35. (Enter 35 as the adjustment value of DENA and press [P] key.)
- 3) Set the adjustment value of L1 to 0. (Enter 0 as the adjustment value of L1, and press [P] key.)
- 4) Set the adjustment value of L2 to 0. (Enter 0 as the adjustment value of L2, and press [P] key.)
- 5) Make a copy at 400%, and calculate the values of L1 and L2. (Enter 100 as the set value (MAGNIFICATION) of the copy magnification ratio, and press [START] key.) (Place a scale on the document table and make a copy.)
 L1 = Distance (mm) from the image lead edge position to the scale position of 10mm x 10
 L2 = Distance (mm) from the image lead edge position to the paper lead edge x 10

- 6) Enter the above values as the set values of L1 and L2. (Enter the adjustment values of L1 and L2, and press [P] key.)

If the adjustment result is not satisfactory, perform the above procedures again from the beginning, or use SIM 50-1 to adjust.

NOTE: If a satisfactory result is not obtained with the above procedures, through the adjustment values are changed individually, the normal adjustment cannot be made.

Perform procedures 3) to 6) continuously.

(Rear edge void area adjustment)

Adjust so that the rear edge void area is 3.5mm. (Change the adjustment value of TRAIL EDGE, and press [START] key.)

(Front/rear frame direction image loss adjustment)

Set the adjustment value of SIDE to 20. (Enter 20 as the adjustment value of SIDE, and press [P] key.)

When this adjustment value is changed, the image position is shifted in the front/rear frame direction.

(Front/rear frame direction void area adjustment)

Adjust so that the total of the front/rear direction void areas is 7.0mm. (Change the adjustment values of FRONT/REAR, and press [START] key.)

Front frame void area = 3.5mm Rear frame void area = 3.5mm

If, as shown above, the front and the rear void areas are not even, use SIM 50-5 to adjust the image off-center position.

| Item | | Content | Set range | Default |
|------------------------------|-------------------|--|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 1 - 6 | — |
| 1 | COPY START | Copy START (Default) | — | — |
| 2 | MAGNIFICATION | Print magnification ratio | 25 - 400% | 400 |
| (Lead edge adjustment value) | | | | |
| 3 | L1 | Distance from the image lead edge to the scale of 10mm. (Platen 400%, 0.1mm increment) | 0 - 999 | — |
| 4 | L2 | Distance from the paper lead edge to the image lead edge (0.1mm increment) | | — |
| (Image loss set value) | | | | |
| 5 | LEAD | Lead edge image loss set value | 0 - 99 | 15 |
| 6 | SIDE | Side image loss set value | | 20 |
| (Void set value) | | | | |
| 7 | LEAD_EDGE (DENA) | Lead edge void set value | 0 - 99 | 35 |
| 8 | TRAIL_EDGE (DENB) | Rear edge void adjustment value | | |
| 9 | FRONT/REAR | Front/Rear void adjustment value | | |

NOTE: When [P] is pressed after entering an adjustment value, the adjustment value is set. When [START] key is pressed instead, the adjustment value is set and copying is performed.)

| | | |
|----------------|-------------|--------------|
| Normal display | | NOW COPYING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

(Copy condition in this simulation)

* To select paper (paper feed tray), perform the following procedures.

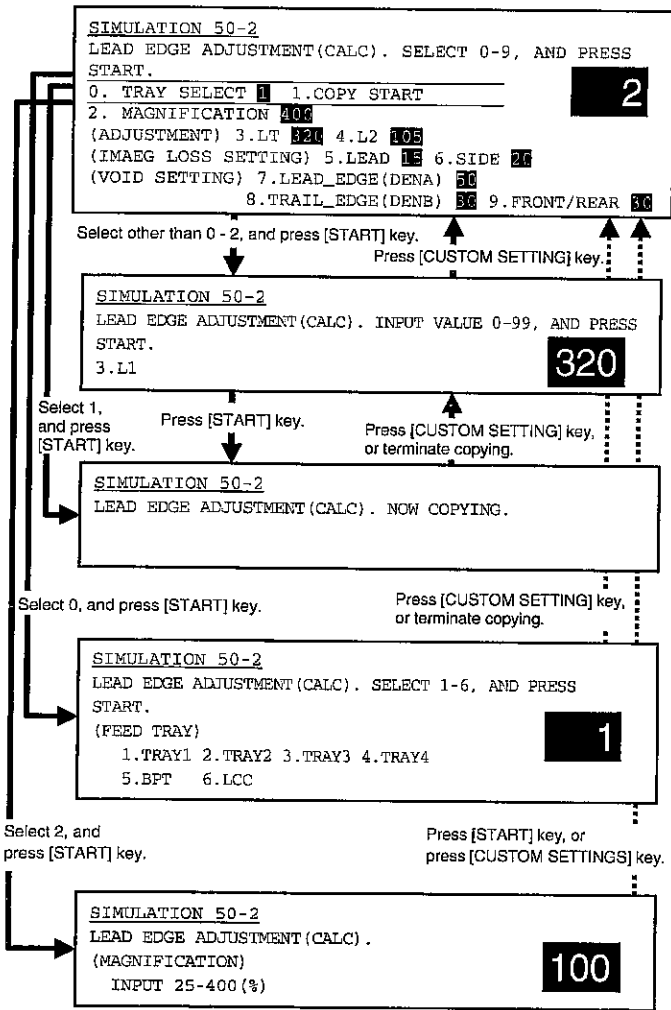
- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray of the target paper with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

* To set the magnification ratio, perform the following procedure.

- 1) Enter 2 with 10-key.
- 2) Press [START] key.
- 3) Enter the copy magnification ratio with 10-key.
- 4) Press [START] key.

| | |
|-----------|--------------|
| Set range | 25 - 400 (%) |
|-----------|--------------|



| 50-5 | |
|--------------------|---|
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the print image position and the void area (image loss) on print paper. (Adjustment as the print engine) (This adjustment is reflected on all the FAX/printer/copy modes.) |
| Section | |
| Item | Picture quality |

Operation/Procedure

(Print image off-center position adjustment)

- 1) Enter the number corresponding to the paper feed tray to be adjusted with 10-key. (Select one of 10 - 16.) (Table 1)
- 2) Press [START] key.
- 3) Enter the adjustment value with 10-key.
- 4) Press [P] key or [START] key. When [START] key is pressed, the adjustment value is set and printing is performed. (Table 2)
Check the off-center of the self-print patten of print-out.
(Shift for the adjustment value change: 0.1mm/step)

The greater the adjustment value is, the more the print image is shifted to the front.

(Lead edge void area adjustment)

- 1) Set the lead edge void adjustment value (DENA) as specified below.
(Standard set value) Paper lead edge void: 3.5mm (DENA: 35)
* Set the adjustment value of DENA to 35. Enter 35 as the adjustment value of DENA, and press [P] key.
- 2) Check the lead edge void area on the self print pattern.
(Enter 1 and press [START] key.)

- 3) If the adjustment result is not satisfactory, perform the following procedures.

* If the lead edge void area is not 3.5mm:
Change the adjustment value of RRCB and perform the adjustment. (Change the adjustment value of RRCB and press [START] key.)
(Shift for the adjustment value change: 0.1mm/step)

(Front/rear frame direction void area adjustment)

Adjust so that the total of the front/rear direction void areas is 7.0mm. (Change the adjustment values of FRONT/REAR, and press [START] key.)

Front frame void area = 3.5mm Rear frame void area = 3.5mm

(Paper resist adjustment)

- 1) Enter the number corresponding to the paper feed tray to be adjusted with 10-key. (Select one of 3 - 9.) (Table 1)
- 2) Press [START] key.
- 3) Enter the adjustment value with 10-key.
- 4) Press [P] key or [START] key. When [START] key is pressed, the adjustment value is set and printing is performed. (Table 2)

If the relative positions of paper and print images vary or a paper jam occurs, change the adjustment value.

(Print condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key. (Table 3)
- 4) Press [START] key. (The paper feed tray is selected.)

When the total of the above set value (1 - 6) and 10 is entered, the mode is changed to the duplex print mode.

NOTE: When [P] key is pressed after entering the adjustment value in this simulation, the adjustment value is set. When [START] key is pressed instead, the adjustment value is set and copying is performed.

(Table 1)

| Item | | | Set range | Default | |
|-----------------------------------|-------------|---|-----------|--------------------------|------------|
| | | | | AR-M550N/U, AR-620N/U | AR-M700N/U |
| 0 | TRAY SELECT | Paper feed tray selection (1 - 6) | — | — | |
| 1 | PRINT START | Print start (Default) | — | — | |
| (Lead edge adjustment value) | | | | | |
| 2 | RRCB | Resist roller clutch ON timing adjustment value | 0 - 99 | 50 | |
| (Resist adjustment value) | | | | | |
| 3 | TRAY1 | Tray 1 adjustment | 0 - 99 | 46 | 48 |
| 4 | TRAY2 | Tray 2 adjustment | | 45 | 46 |
| 5 | TRAY3 | Tray 3 adjustment | | 46 | 47 |
| 6 | TRAY4 | Tray 4 adjustment | | 46 | 47 |
| 7 | BPT | Manual feed tray adjustment | | 45 | 46 |
| 8 | LCC | Side LCC adjustment | | 45 | 46 |
| 9 | ADU | Adjustment when paper is fed again from ADU | | 43 | 46 |
| (Off-center set value) Self print | | | | | |
| 10 | TRAY 1 | Tray 1 adjustment | 0 - 99 | 50 | |
| 11 | TRAY 2 | Tray 2 adjustment | | | |
| 12 | TRAY 3 | Tray 3 adjustment | | | |
| 13 | TRAY 4 | Tray 4 adjustment | | | |
| 14 | BPT | Manual feed tray adjustment | | | |
| 15 | LCC | Side LCC adjustment | | | |
| 16 | ADU | Adjustment when paper is fed again from ADU | | | |

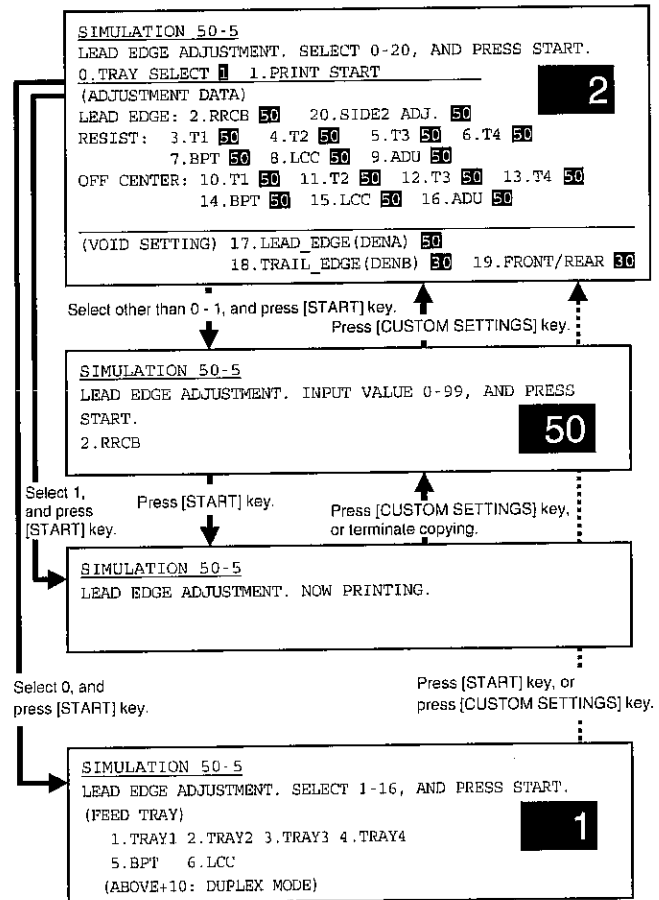
| Item | Set range | Default | | |
|------------------|-------------------|--|----------------|----|
| | | AR-M550N/U, AR-620N/U | AR- M700N/U | |
| (Void set value) | | | | |
| 17 | LEAD_EDGE (DENA) | Lead edge void set value | 0 - 99 | 35 |
| 18 | TRAIL_EDGE (DENB) | Rear edge void adjustment value | | |
| 19 | FRONT/ REAR | Front/Rear void adjustment value | | |
| 20 | SIDE2 ADJ. | RRCB correction value in the back surface print mode | 1 - 99 | 50 |

(Table 2)

| | | |
|----------------|-------------|---------------|
| Normal display | | NOW PRINTING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

(Table 3)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |



50-6

| Purpose | Adjustment |
|--------------------|--|
| Function (Purpose) | Used to adjust the copy image position and void area (image loss) on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-7 (simple method).) (SPF mode) |
| Section | |
| Item | Picture quality |

Operation/Procedure

(Lead edge image loss adjustment) (Table 1)

- 1) Set the front and back surface image loss adjustment values (LEAD EDGE) as specified below:
(Standard set value) Lead edge image loss: 1.5mm (LEAD: 1.5)
Paper lead edge: 3.5mm (DENA: 35)

* Set the adjustment value of LEAD to 15. (Enter 15 as the adjustment value of LEAD EDGE, and press [P] key.)

- 2) Make a duplex copy at 100% with the SPF, and check that the lead edge (image loss) is 1.5mm either on the front surface and the back surface. (Select the duplex mode in the paper selection mode of SIM 50-6.) (Table 3) (Enter 100 as the copy magnification ratio set value (MAGNIFICATION), and press [START] key.)

If the adjustment result is not satisfactory, perform the following procedures:

- 3) Change the adjustment values of SIDE1 and SIDE2, and perform the adjustment. (Change the adjustment values of SIDE1 and SIDE2, and press [START] key.)

SIDE1: SPF front surface document lead edge scan position adjustment value

SIDE2: SPF back surface document lead edge scan position adjustment value

(Shift for the adjustment value change: 0.1mm/step)

(The image scan start timing is determined with the detection timing of the document lead edge by the detector SPPD4.)

Repeat procedures 2) and 3) until a satisfactory result is obtained.

(Rear edge image loss adjustment)

- 1) Use the SPF at 100% to make a duplex copy, and check that the rear edge image loss is 1.5mm on the front and the back surfaces. (Select the duplex mode in the paper selection mode of SIM 50-6.) (Enter 100 as the copy magnification ratio set value (MAGNIFICATION), and press [START] key.)

If the adjustment value is not satisfactory, , perform the following procedure.

- 2) Change the adjustment value of TRAIL EDGE. Change the adjustment value of TRAIL EDGE, and press [START] key.

Repeat the above procedures until a satisfactory result is obtained.

(Front/rear frame direction image loss adjustment)

Set the adjustment value of the front surface and the back surface (FRONT/REAR) to 20. (Enter 20 as the adjustment value of FRONT/REAR, and press [P] key.)

When the adjustment value is changed, the image position is shifted in the front/rear frame direction.

NOTE: When [P] key is pressed after entering the adjustment value, the adjustment value is set. When [START] key is pressed instead, the adjustment value is set and copying is performed. (Table 2)

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key. (Table 3)
- 4) Press [START] key. (The paper feed tray is selected.)

* To set the copy magnification ratio, perform the following procedure.

- 1) Enter 2 with 10-key.
2) Press [START] key.
3) Enter the copy magnification ratio with 10-key.
4) Press [START] key.

| | |
|-----------|--------------|
| Set range | 25 - 200 (%) |
|-----------|--------------|

(Table 1)

| Item | | | Set range | Default |
|--------------------------------|---------------|---|-----------|---------|
| 0 | TRAY SELECT | Paper feed tray selection | 1 - 6 | — |
| 1 | COPY START | Copy START (Default) | — | — |
| 2 | MAGNIFICATION | Print magnification ratio | 25 - 200% | — |
| (Lead edge adjustment value) | | | | |
| 3 | SIDE1 | Front surface document scan start position adjustment value | 0 - 99 | 50 |
| 4 | SIDE2 | Back surface document scan start position adjustment value | | |
| (Image loss set value: SIDE 1) | | | | |
| 5 | LEAD_EDGE | Front surface lead edge image loss set value | 0 - 99 | 15 |
| 6 | FRONT_REAR | Front surface side edge image loss set value | | 20 |
| 7 | TRAIL_EDGE | Front surface rear edge image loss set value | 0 - 20 | 0 |
| (Image loss set value: SIDE 2) | | | | |
| 8 | LEAD_EDGE | Back surface lead edge image loss set value | 0 - 99 | 15 |
| 9 | FRONT/REAR | Back surface side edge image loss set value | | 20 |
| 10 | TRAIL_EDGE | Back surface rear edge image loss set value | 0 - 20 | 0 |

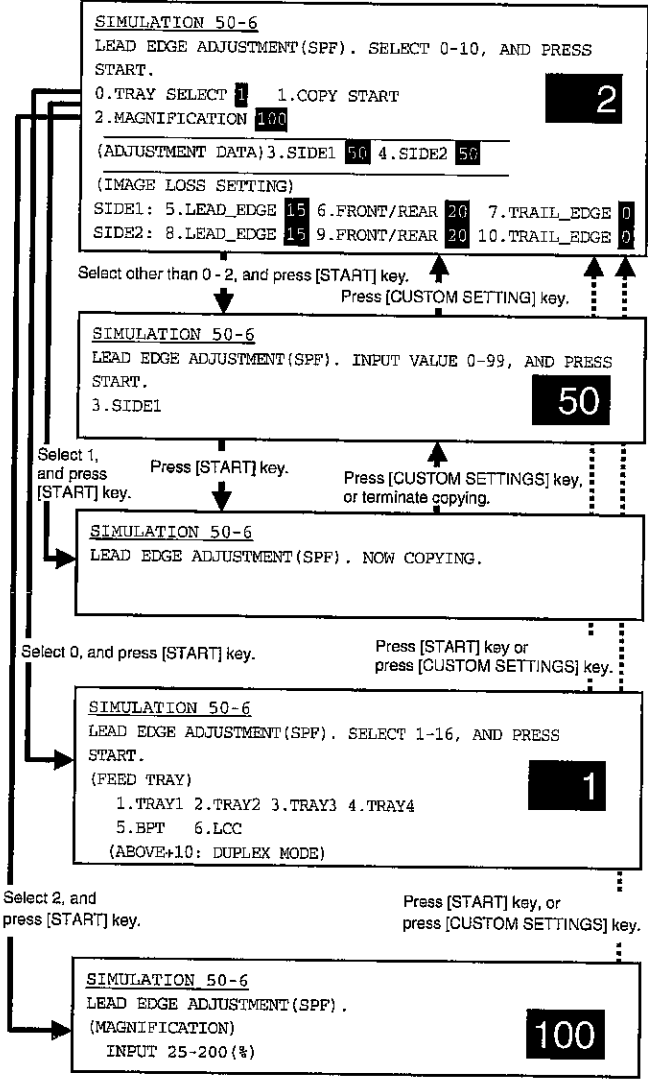
(Table 2)

| | | |
|----------------|-------------|--------------|
| Normal display | | NOW COPYING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

(Table 3)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

When the total of the above set value and 10 is entered, the mode is changed to the duplex mode (DD), and a duplex copy is made.



| | |
|--------------------|--|
| 50-7 | |
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the copy image position and void area (image loss) on print paper in the copy mode. (The similar adjustment can be performed with SIM 50-6.) (SPF mode) |
| Section | |
| Item | Picture quality |

Operation/Procedure

- (Lead edge image loss adjustment)
- Set the front and back surface image loss adjustment values (LEAD EDGE) as specified below:
(Standard set value) Lead edge image loss: 1.5mm (LEAD: 1.5)
Paper lead edge void: 3.5mm (DENA: 35)
* Set the adjustment value of LEAD to 15. (Enter 15 as the adjustment value of LEAD EDGE, and press [P] key.)
 - Set the adjustment value of L4 to 0. (Enter 0 as the adjustment value of L4, and press [P] key.)
 - Set the adjustment value of L5 to 0. (Enter 0 as the adjustment value of L5, and press [P] key.)
 - Make a copy at 200% with the SPF, and calculate the values of L4 and L5. (Enter 200 as the set value of the copy magnification ratio set value (MAGNIFICATION) and press [START] key.)
L4 = Distance (mm) from the image lead edge position to the scale of 10mm x 10

L5 = Distance (mm) from the image lead edge position to the paper lead edge x 10

- 5) Enter the above values as the set values of L4 and L5. (Enter the adjustment values of L4 and L5, and press [P] key.)
(The image scan start timing is determined with the detection timing of the document lead edge by the detector SPPD4.)

If the adjustment result is not satisfactory, perform the above procedures again or adjust with SIM 50-1.

NOTE: If the adjustment result of the above procedures is not satisfactory, though the adjustment value is changed individually, the adjustment cannot be completed normally.

Repeat procedures 2) - 6) until a satisfactory result is obtained.

(Rear edge image loss adjustment)

Adjust so that the rear edge image loss is 3.5mm. (Change the adjustment value of TRAIL_EDGE, and press [START] key.)

(Front/rear frame direction image loss adjustment)

Set the adjustment value of SIDE to 20. (Enter 20 as the adjustment value of SIDE, and press [P] key.)

When the adjustment value is changed, the image position is shifted in the front/rear frame direction.

NOTE: When [P] key is pressed after entering the adjustment value, the adjustment value is set. When [START] key is pressed instead, the adjustment value is set and copying is performed. (Table 2)

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key. (Table 3)
- 4) Press [START] key. (The paper feed tray is selected.)

* To set the copy magnification ratio, perform the following procedure.

- 1) Enter 2 with 10-key.
- 2) Press [START] key.
- 3) Enter the copy magnification ratio with 10-key.
- 4) Press [START] key.

| | |
|-----------|--------------|
| Set range | 25 - 200 (%) |
|-----------|--------------|

(Table 1)

| Item | | Set range | Default |
|--------------------------------|---------------|--|---------|
| 0 | TRAY SELECT | Paper feed tray selection (1 - 6) | -- |
| 1 | COPY START | Copy START (Default) | -- |
| 2 | MAGNIFICATION | Print magnification ratio (25 - 200%) | -- |
| (Lead edge adjustment value) | | | |
| 3 | L4 | Distance from the front surface image lead edge to the scale of 10mm (SPF: 200%) | 0 - 999 |
| 4 | L5 | Distance from the back surface image lead edge to the scale of 10mm (SPF: 200%) | -- |
| (Image loss set value: SIDE 1) | | | |
| 5 | LEAD_EDGE | Front surface lead edge image loss set value | 0 - 99 |
| 6 | FRONT_REAR | Front surface side edge image loss set value | 15 |
| 7 | TRAIL_EDGE | Front surface rear edge image loss set value | 20 |
| | | | 0 |

| Item | | Set range | Default |
|--------------------------------|------------|---|---------|
| (Image loss set value: SIDE 2) | | | |
| 8 | LEAD_EDGE | Back surface lead edge image loss set value | 0 - 99 |
| 9 | FRONT/REAR | Back surface side edge image loss set value | 15 |
| 10 | TRAIL_EDGE | Back surface rear edge image loss set value | 20 |
| | | | 0 |

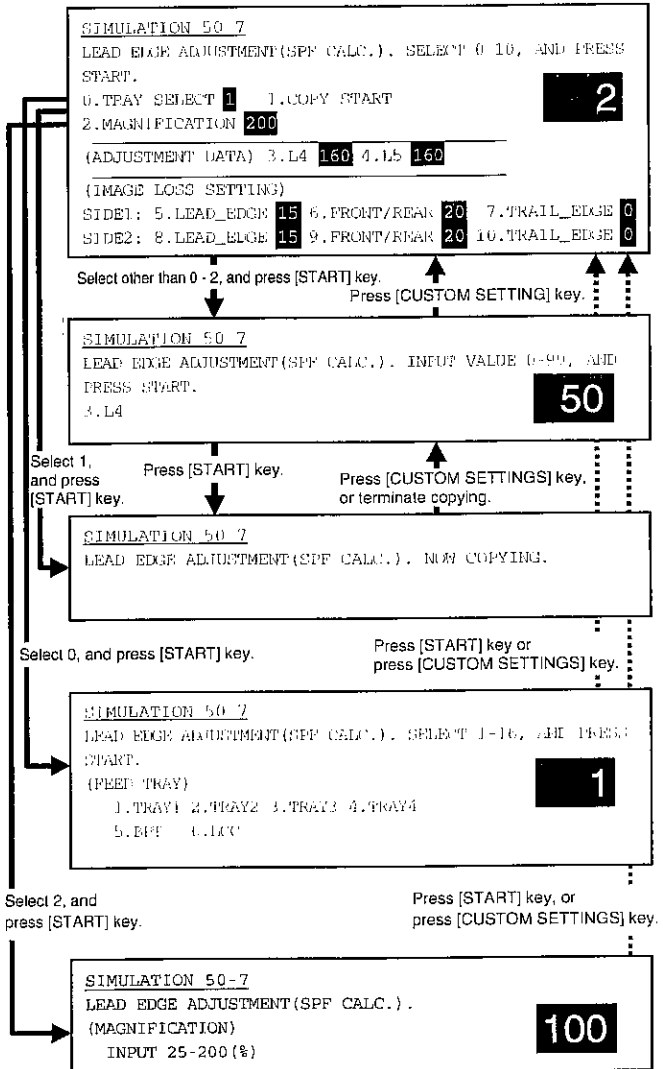
(Table 2)

| | | |
|----------------|-------------|--------------|
| Normal display | | NOW COPYING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

(Table 3)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

When the total of the above set value and 10 is entered, the mode is changed to the duplex mode (DD), and a duplex copy is made.



50-10

| Purpose | Adjustment |
|---------------------------|---|
| Function (Purpose) | Used to adjust the print image off-center position. (Adjusted separately for each paper feed section.) |
| Section | |
| Item | Picture quality Image position |

Operation/Procedure

(Print image off-center position adjustment)

NOTE: This simulation cannot provide an accurate adjustment. Do not use.

- 1) Enter the number corresponding to the number of the paper feed tray to be adjusted with 10-key. (Select one of 3 - 9.)

| | Item | Set range | Default |
|-------------------------------|---------------|---|---------------|
| 0 | TRAY SELECT | Paper feed tray selection | 1 - 6 |
| 1 | COPY START | Copy START (Default) | — |
| 2 | MAGNIFICATION | Print magnification ratio | 25 - 400% 100 |
| (Off-center adjustment value) | | | |
| 3 | TRAY1 | Tray 1 adjustment | 0 - 99 50 |
| 4 | TRAY2 | Tray 2 adjustment | |
| 5 | TRAY3 | Tray 3 adjustment | |
| 6 | TRAY4 | Tray 4 adjustment | |
| 7 | BPT | Manual feed tray adjustment | |
| 8 | LCC | Side LCC adjustment | |
| 9 | ADU | Adjustment when paper is fed again from ADU | |

- 2) Press [START] key.
 3) Enter the adjustment value with 10-key.
 4) Press [P] key or [START] key. When [START] key is pressed, the adjustment value set and copying is performed.

| | | |
|----------------|--------------|--------------|
| Normal display | NOW COPYING. | |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

(Image off-center adjustment)

- 1) Enter 1 with 10-key.
 2) Press [START] key. The adjustment pattern is printed.
 3) Check the off-center of the printed image.
 (UNIT: 0.1mm/step When the adjustment value is increased, the print image is shifted to the front direction.)

NOTE: This adjustment can be performed with SIM 50-5.

(Copy condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
 3) Enter the number corresponding to the paper feed tray to be used with 10-key. (Select one of 1 - 6)
 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

When the total of the above set value and 10 is entered, the mode is changed to the duplex print mode.

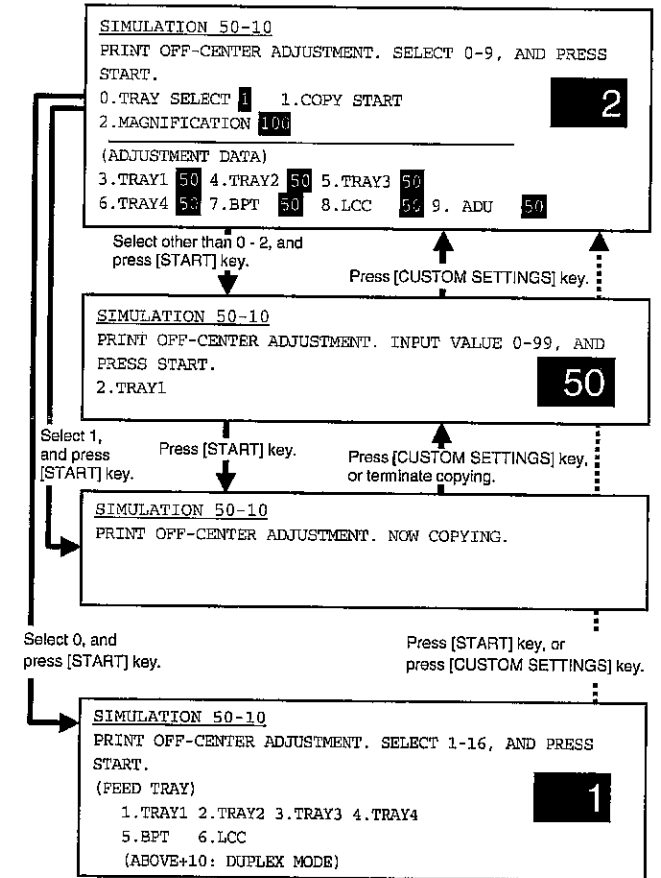
* To set the copy magnification ratio, perform the following procedure.

- 1) Enter 2 with 10-key.
 2) Press [START] key.
 3) Enter the copy magnification ratio with 10-key.

- 4) Press [START] key.

| | |
|-----------|--------------|
| Set range | 25 - 400 (%) |
|-----------|--------------|

NOTE: When [P] key is pressed after entering the adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.



50-12

| Purpose | Adjustment |
|---------------------------|---|
| Function (Purpose) | Used to adjust the scan image off-center position. (Adjusted separately for each scan mode.) |
| Section | |
| Item | Picture quality Image position |

Operation/Procedure

(Select the scan mode to be adjusted.)

- 1) Enter the number corresponding to the scan mode to be adjusted with 10-key. (Select one of 3 - 5.)

| | Item | Set range | Default |
|---------------------------|---------------|------------------------------|---------------|
| 0 | TRAY SELECT | Paper feed tray selection | 1 - 5 |
| 1 | COPY START | Copy START (Default) | — |
| 2 | MAGNIFICATION | Print magnification ratio | 25 - 400% 100 |
| (Resist adjustment value) | | | |
| 3 | PLATEN | OC mode adjustment | 0 - 99 50 |
| 4 | SPF SIDE1 | SPF front surface adjustment | |
| 5 | SPF SIDE2 | SPF back surface adjustment | |

- 2) Press [START] key.

(Scan off-center position adjustment)

- 1) Enter the scan image position adjustment value with 10-key.
- 2) Press [P] key or [START] key.
When [START] key is pressed, the adjustment value is set and copying is performed.

| | | |
|----------------|-------------|--------------|
| Normal display | | NOW COPYING. |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

Check the off-center of the printed image.

Repeat the above procedures until a satisfactory result is obtained.
(UNIT: 0.1mm/step When the adjustment value is increased, the print image is shifted to the front direction.)

(Copy condition setting in this simulation)

- * To select paper (paper feed tray), perform the following procedures.
- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key. (Select one of 1 - 6)
- 4) Press [START] key. (The paper feed tray is selected.)

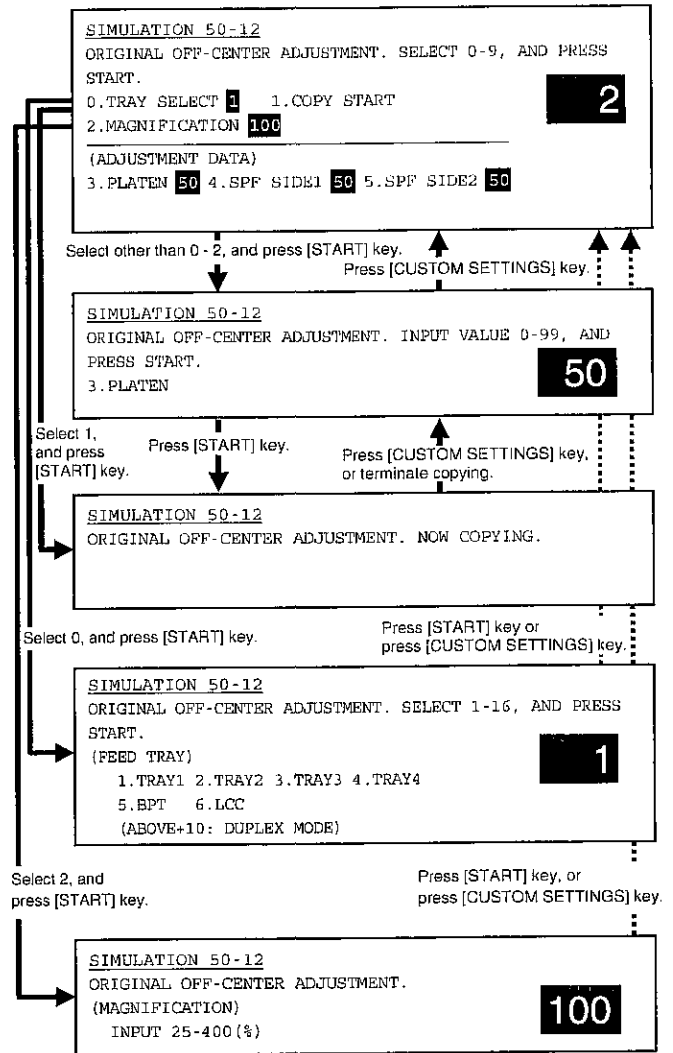
| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | Side LCC |

When the total of the above set value and 10 is entered, the mode is changed to the duplex print mode.

- * To set the copy magnification ratio, perform the following procedure.
- 1) Enter 2 with 10-key.
- 2) Press [START] key.
- 3) Enter the copy magnification ratio with 10-key.
- 4) Press [START] key.

| | |
|-----------|--------------|
| Set range | 25 - 400 (%) |
|-----------|--------------|

NOTE: When [P] key is pressed after entering the adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.



| | |
|--------------------|---|
| 50-27 | |
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the image loss of the scan image in the FAX/scan mode. |
| Section | |
| Item | Picture quality |

Operation/Procedure

- (Select the scan mode to be adjusted.)
- 1) Enter the number corresponding to the adjustment item with 10-key.
 - 2) Press [START] key.
 - 3) Enter the adjustment value with 10-key.
 - 4) Press [START] key.

(Shift for the adjustment value change: 1.0mm/step)

| Item | | | Set range | Default |
|----------|------------------|---------------|----------------------|------------|
| FAX send | | | | |
| 1 | OC (LEAD_EDGE) | OC lead edge | 0 - 10 (Unit 1mm) | 3 (3mm) |
| 2 | OC (FRONT/REAR) | OC side | | |
| 3 | OC (TRAIL_EDGE) | OC rear edge | | |
| 4 | SPF (LEAD_EDGE) | SPF lead edge | | |
| 5 | SPF (FRONT/REAR) | SPF side | | |
| 6 | SPF (TRAIL_EDGE) | SPF rear edge | | |
| 7 | CIS (LEAD_EDGE) | CIS lead edge | | |
| 8 | CIS (FRONT/REAR) | CIS side | | |
| 9 | CIS (TRAIL_EDGE) | CIS rear edge | | |

| Item | | Set range | Default |
|--------------|------------------|----------------------|------------|
| Scanner mode | | | |
| 10 | OC (LEAD_EDGE) | 0 - 10 (Unit 1mm) | 0 (0mm) |
| 11 | OC (FRONT/REAR) | | |
| 12 | OC (TRAIL_EDGE) | | |
| 13 | SPF (LEAD_EDGE) | | |
| 14 | SPF (FRONT/REAR) | | |
| 15 | SPF (TRAIL_EDGE) | | |
| 16 | CIS (LEAD_EDGE) | | |
| 17 | CIS (FRONT/REAR) | | |
| 18 | CIS (TRAIL_EDGE) | | |

SIMULATION 50-27
ORIGINAL IMAGE LOSS SETTING(FAX/SCN). SELECT 1-18, AND PRESS START.

[FAX]

| | | | | | |
|--------------------|---|---------------------|---|---------------------|---|
| 1. OC (LEAD_EDGE) | 0 | 2. OC (FRONT/REAR) | 0 | 3. OC (TRAIL_EDGE) | 0 |
| 4. SPF (LEAD_EDGE) | 0 | 5. SPF (FRONT/REAR) | 0 | 6. SPF (TRAIL_EDGE) | 0 |
| 7. CIS (LEAD_EDGE) | 0 | 8. CIS (FRONT/REAR) | 0 | 9. CIS (TRAIL_EDGE) | 0 |

[SCN]

| | | | | | |
|---------------------|---|----------------------|---|----------------------|---|
| 10. OC (LEAD_EDGE) | 0 | 11. OC (FRONT/REAR) | 0 | 12. OC (TRAIL_EDGE) | 0 |
| 13. SPF (LEAD_EDGE) | 0 | 14. SPF (FRONT/REAR) | 0 | 15. SPF (TRAIL_EDGE) | 0 |
| 16. CIS (LEAD_EDGE) | 0 | 17. CIS (FRONT/REAR) | 0 | 18. CIS (TRAIL_EDGE) | 0 |

Press [START] key. Press [CUSTOM SETTINGS] key.

SIMULATION 50-27
ORIGINAL IMAGE LOSS SETTING(FAX/SCN). INPUT 0-10, AND PRESS START.

1. OC (LEAD_EDGE)

0

51

51-2

| Purpose | Adjustment |
|---------------------------|---|
| Function (Purpose) | Used to adjust the contact pressure of paper on the resist roller of each section (each paper feed, duplex feed and SPF paper feed of the copier). (This adjustment is required when the print image position variations are considerably great or when paper jams occur frequently.) |
| Section | Paper transport (Discharge/Switchback/Transport) |
| Item | Operation |

Operation/Procedure

(Select the scan mode to be adjusted.)

- 1) Enter the number corresponding to the paper feed tray to be adjusted with 10-key. (Select one of 2 - 12.)

| Item | | Set range | Default | |
|------|-------------|--|--------------------------|------------|
| | | | AR-M550N/U, AR-620N/U | AR-M700N/U |
| 0 | TRAY SELECT | Paper feed tray selection (1 - 5) | - | - |
| 1 | PRINT START | Print start (Default) | - | - |
| 2 | TRAY1 | Tray 1 adjustment value | 0 - 99 | 46 |
| 3 | TRAY2 | Tray 2 adjustment value | | 45 |
| 4 | TRAY3 | Tray 3 adjustment value | | 46 |
| 5 | TRAY4 | Tray 4 adjustment value | | 47 |
| 6 | BPT | Manual feed tray resist adjustment value | 45 | 46 |
| 7 | LCC | Side LCC resist adjustment value | | |
| 8 | ADU | ADU resist adjustment value | | 43 |
| 9 | SPF (TOP) | SPF resist adjustment value (Top speed) | 50 | |

| Item | | Set range | Default | |
|------|-----------------|---|--------------------------|------------|
| | | | AR-M550N/U, AR-620N/U | AR-M700N/U |
| 10 | SPF (HIGH) | SPF resist adjustment value (High speed) | 0 - 99 | 50 |
| 11 | SPF (LOW) | SPF resist adjustment value (Low speed) | | |
| 12 | SPF FEED (TOP) | SPF paper feed resist adjustment value (Top speed) | 0 - 99 | 50 |
| 13 | SPF FEED (HIGH) | SPF paper feed resist adjustment value (High speed) | | |
| 14 | SPF FEED (LOW) | SPF paper feed resist adjustment (Low speed) | | |

- 2) Press [START] key.

(Resist adjustment)

- 1) Enter the resist adjustment value with 10-key.

- 2) Press [START] key.

When [START] key is pressed, the adjustment value is set and paper feed and copying are performed.

| | | |
|----------------|---------------|--------------|
| Normal display | NOW PRINTING. | |
| ERROR display | Door open | DOOR OPEN. |
| | Jam | JAM |
| | Paper empty | PAPER EMPTY. |

(Copy condition setting in this simulation)

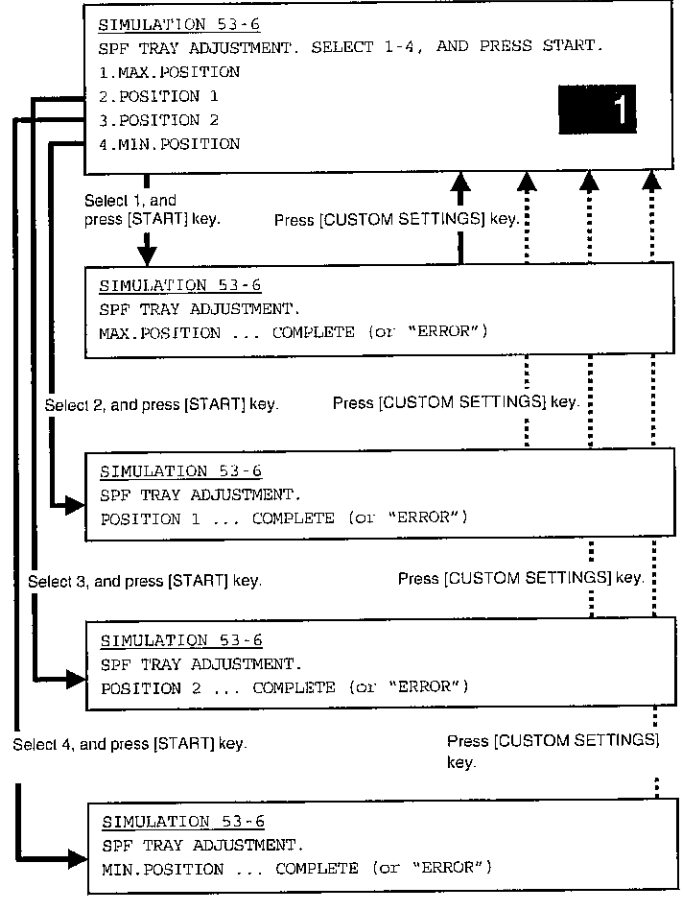
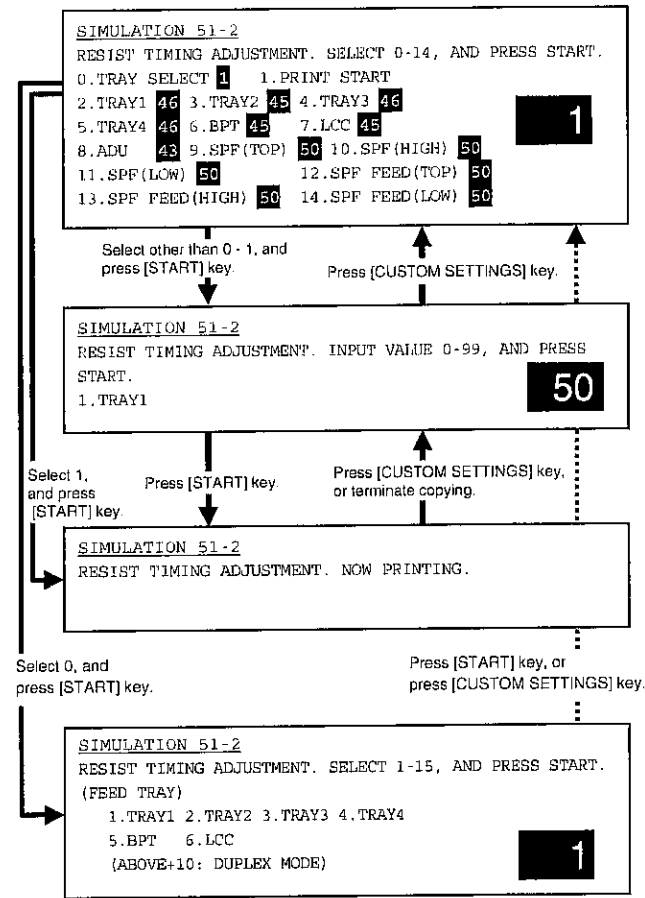
* To select paper (paper feed tray), perform the following procedures.

- 1) Enter 0 with 10-key.
- 2) Press [START] key. (The mode is changed to the paper feed tray selection mode.)
- 3) Enter the number corresponding to the paper feed tray to be used with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

| | | |
|---|-------|-------------|
| 1 | TRAY1 | TRAY1 |
| 2 | TRAY2 | TRAY2 |
| 3 | TRAY3 | TRAY3 |
| 4 | TRAY4 | TRAY4 |
| 5 | BPT | Manual feed |
| 6 | LCC | LCC |

When the total of the above set value (1 - 6) and 10 is entered, the mode is changed to the duplex print mode.

NOTE: When [P] key is pressed after entering the adjustment value in this simulation, the adjustment value is set. When [START] key is pressed, the adjustment value is set and copying is performed.



53

| | |
|--------------------|--|
| 53-6 | |
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the DSPF width detection level. |
| Section | |
| Item | Operation |

Operation/Procedure

- Set the SPF paper feed guide to the max. position.
 - Select "MAX. POSITION" with 10-key.
 - Press [START] key.
The max. width detection level is recognized.
 - Press [CSUTOM SETTING] key.
 - Set the SPF paper feed guide to A4R size position.
 - Select POSITION 1 with 10-key.
 - Press [START] key.
The A4R width detection level is recognized.
 - Press [CSUTOM SETTING] key.
 - Set the SPF paper feed guide to A5R size position.
 - Select POSITION 2 with 10-key.
 - Press [START] key.
The A5R width detection level is recognized.
 - Press [CSUTOM SETTING] key.
 - Set the SPF paper feed guide to the min. position.
 - Select "MIN. POSITION" with 10-key.
 - Press [START] key.
The min. width detection level is recognized.
- If the above procedures are not completed normally, ERROR is displayed. When completed normally, COMPLETE is displayed.

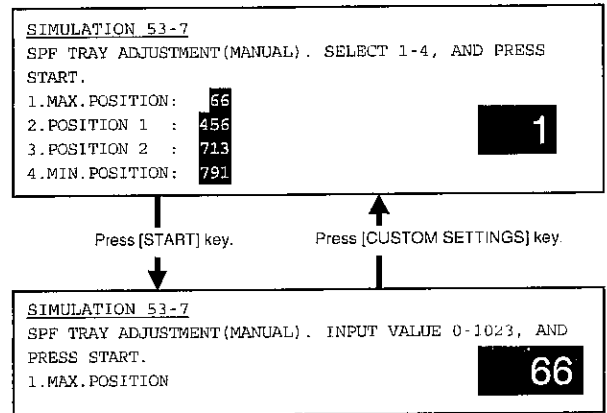
| | |
|--------------------|--|
| 53-7 | |
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to enter the SPF width detection adjustment value. |
| Section | DSPF |
| Item | Operation |

Operation/Procedure

- Enter the number corresponding to the set item with 10-key.

| | Item | Set range | Default |
|---|---------------|-----------------------|---------|
| 1 | MAX. POSITION | Max. width | 66 |
| 2 | POSITION 1 | Adjustment position 1 | 456 |
| 3 | POSITION 2 | Adjustment position 2 | 713 |
| 4 | MIN. POSITION | Min. width | 791 |

- Press [START] key.
- Enter the set value with 10key.
- Press [START] key.



53-8

| Purpose | Adjustment |
|--------------------|---|
| Function (Purpose) | Used to adjust the document scan start position. (Used to adjust the scanner scan position in the SPF mode front scan.) |
| Section | |
| Item | |

Operation/Procedure

- 1) Select 2 with 10-key.
- 2) Press [START] key.
- 3) Enter the adjustment value with 10key. (1 count: 0.1mm)
- 4) Press [START] key.

| | Item | Set range | Default |
|---|--|-----------|---------|
| 2 | MANUAL Manual feed adjustment (Direct entry of a number) | 1-70 | 32 |



SIMULATION 53-8

SPF SCANNING POSITION ADJUSTMENT. PRESS START.

2.MANUAL

Select 2, and
press [START] key.

Press [START] key, or
press [CUSTOM SETTINGS] key.

SIMULATION 53-8

SPF SCANNING POSITION ADJUSTMENT. INPUT VALUE 1-70, AND PRESS START.

2.MANUAL

25

55

55-1

| Purpose | Setting |
|--------------------|--|
| Function (Purpose) | Used to set the specifications of the engine control operations. (PCU PWB) |
| Section | |
| Item | Operation Specifications |

Operation/Procedure

This simulation is used to change and check the engine soft SW. Set this setting to the default.

There is no need to change this setting in the market.

SIMULATION 55-1

ENGINE SOFT SW. SETTING. SELECT 1-16, AND PRESS START.

1

Press [START] key. Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 55-1

ENGINE SOFT SW. SETTING. INPUT DATA No(1-8), AND PRESS START.

SOFT SW-1:

1 2 3 4 5 6 7 8
00001001

55-2

| Purpose | Setting |
|--------------------|---|
| Function (Purpose) | Used to set the specifications of the scanner control operations. (Scanner control PWB) |
| Section | |
| Item | Operation Specifications |

Operation/Procedure

This simulation is used to change and check the scanner soft SW. Set this setting to the default.

There is no need to change this setting in the market.

SIMULATION 55-2

SCANNER SOFT SW. SETTING. SELECT 1-16, AND PRESS START.

1

Press [START] key. Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 55-2

SCANNER SOFT SW. SETTING. INPUT DATA No(1-8), AND PRESS START.

SOFT SW-1:

1 2 3 4 5 6 7 8
00001001

55-3

| Purpose | Setting |
|--------------------|--|
| Function (Purpose) | Used to set the specifications of the controller operations. (MFP control PWB) |
| Section | |
| Item | Operation Specifications |

Operation/Procedure

This simulation is used to change and check the controller soft SW. Set this setting to the default.

There is no need to change this setting in the market.

SIMULATION 55-3

MFP SOFT SW. SETTING. SELECT 1-16, AND PRESS START.

1

Press [START] key. Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 55-3

MFP SOFT SW. SETTING. INPUT DATA No(1-8), AND PRESS START.

SOFT SW-1:

1 2 3 4 5 6 7 8
00001001

56

56-1

| Purpose | Data transfer |
|--------------------|---|
| Function (Purpose) | Used to transfer the MFP controller data. (Used to repair the PWB.) |
| Section | MFP controller |
| Item | Data transfer |

Operation/Procedure

- 1) Select the number corresponding to the data transfer mode with 10-key.

| | | |
|---|--|---|
| 1 | ALL (EEPROM, SRAM, FlashROM) → HDD | All the contents of memory are transferred to HDD. (Similar to execution of items 3 and 5.) |
| 2 | HDD → ALL (EEPROM, SRAM, FlashROM) | The HDD contents are transferred to all the memories. (Similar to execution of items 4 and 6.) |
| 3 | EEPROM → HDD | Transfer from EEPROM to HDD |
| 4 | HDD → EEPROM | Transfer from HDD to EEPROM |
| 5 | SRAM (+ FAX Memory, + Option Memory) → HDD | Transfer from SRAM to HDD. When, however, the FAX memory or an option memory (for FAX memory) * is installed, the contents of the Fax memory are also transferred to HDD. |
| 6 | HDD → SRAM (+ FAX Memory, + Option → Memory) | Transfer from HDD to SRAM. When, however, the FAX memory or an option memory (for FAX memory) * is installed, the contents HDD are transferred to the FAX memory as well as the SRAM. |
| 7 | FontROM → HDD | Transfer from the font ROM to HDD |

*: When Flash ROM or OP_Flash ROM is not installed, transfer is not made.

- Press [START] key.
- The confirmation menu is opened to confirm YES/NO of data transfer. Select one.

| | | |
|---|-----|--------------------------------|
| 1 | YES | Data transfer is executed. |
| 2 | NO | Data transfer is not executed. |

- Press [START] key.
- After completion of transfer, the transfer result is displayed.
- If there is no error, the machine is automatically reset after completion of data transfer.
- If there is an error, "NG" is displayed. (The machine is not reset.)
- When restoring from HDD, fit the configurations of the Flash ROM and the optional Flash ROM at back-up.

SIMULATION 56-1
DATA COPY. SELECT 1-7, AND PRESS START.
1.ALL(EEPROM,SRAM,FlashROM) → HDD
2.HDD → ALL(EEPROM,SRAM,FlashROM)
3.EEPROM → HDD
4.HDD → EEPROM
5.SRAM(+FAX Memory,+Option Memory) → HDD
6.HDD → SRAM(+FAX Memory,+Option Memory)
7.FontROM → HDD

1

Press [START] key. Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 56-1
EEPROM → HDD DATA COPY.
ARE YOU SURE?
1. YES
2. NO

1

Select 1 and press [START] key.

SIMULATION 56-1
EEPROM → HDD DATA COPY.
COMPLETE (or NG)

60

60-1

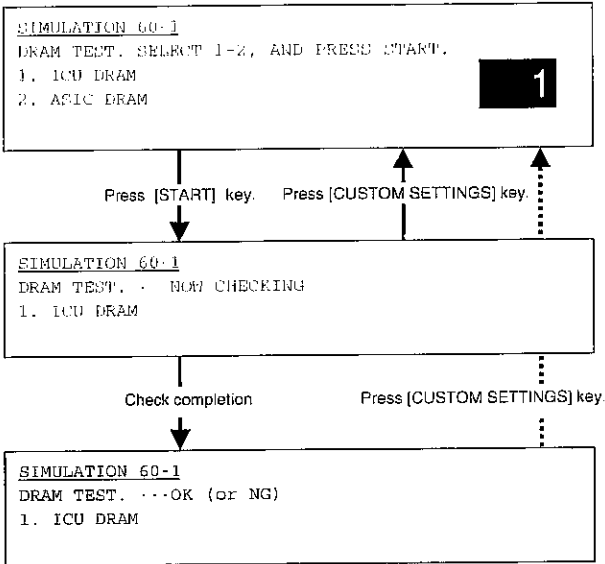
| | |
|--------------------|---|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the MFP control (DRAM) operations (read/write). |
| Section | ICU |
| Item | Operation |

Operation/Procedure

- Enter the number corresponding to the memory to be checked with 10-key.

| | | |
|---|-----------|-------------------|
| 1 | MFP DRAM | ERDH image memory |
| 2 | ASIC DRAM | ASIC image memory |

- Press [START] key.
- The memory read/write operation is started.
- After starting the operation, "NOW CHECKING" is displayed during checking. When read/write is normally completed, "OK" is displayed. If an error occurs, "NG" is displayed.



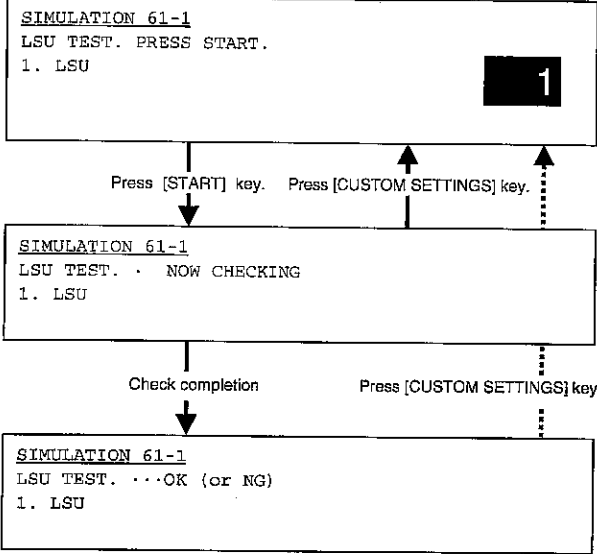
61

61-1

| | |
|--------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the scanner (write) unit (LSU). |
| Section | Scanner (write) unit (LSU) |
| Item | Operation |

Operation/Procedure

- Used to check if the LSU delivers output of the sync signal (HSYNC/) or not.
- "NOW CHECKING" is displayed during checking. When the test is normally completed, "OK" is displayed. If an error occurs, "NG" is displayed.



61-2

| Purpose | Adjustment |
|--------------------|---|
| Function (Purpose) | Used to adjust the laser power (absolute value) in the copy mode. |
| Section | Scanner (write) unit (LSU) |
| Item | Operation |

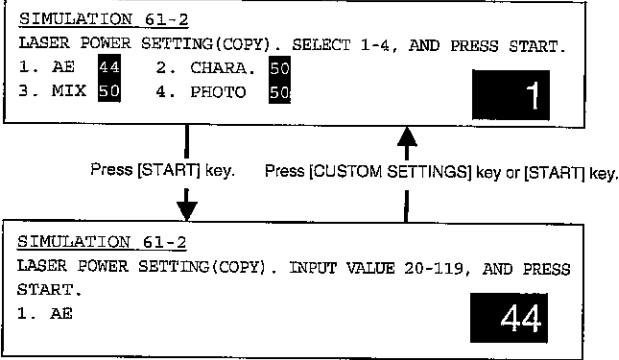
Operation/Procedure

- 1) Select the number corresponding to the adjustment mode with 10-key.

| Item | Set range | Default | |
|-----------------------|-----------|------------------------|------------|
| | | AR-M550N/U, AR-M620N/U | AR-M700N/U |
| 1 AE | 32 - 82 | 44 | 38 |
| 2 CHARA. Text mode | | 50 | 43 |
| 3 MIX Text/Photo mode | | 50 | 43 |
| 4 PHOTO Photo mode | | 50 | 43 |

- 2) Press [START] key.
3) Enter the adjustment value with 10-key.
4) Enter [START] key.

NOTE: Be sure to set the default value. If not, a trouble may occur in the LSU.



61-3

| Purpose | Adjustment |
|--------------------|--|
| Function (Purpose) | Used to adjust the laser power (absolute value) in the FAX mode. |
| Section | Scanner (write) unit (LSU) |
| Item | Operation |

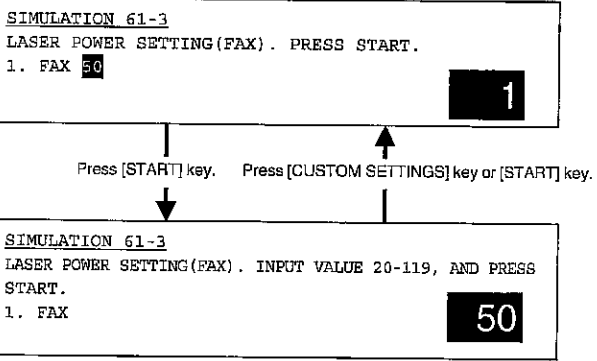
Operation/Procedure

- 1) Select the number corresponding to the adjustment mode with 10-key.
2) Press [START] key.
3) Enter the adjustment value with 10-key.

| Set range | 32 - 82 |
|-----------|--|
| Default | 50 (AR-M550N/U, AR-M620N/U) 38 (AR-M700N/U) |

- 4) Enter [START] key.

NOTE: Be sure to set the default value. If not, a trouble may occur in the LSU.



61-4

| Purpose | Adjustment |
|--------------------|--|
| Function (Purpose) | Used to adjust the laser power (absolute value) in the printer mode. |
| Section | Scanner (write) unit (LSU) |
| Item | Operation |

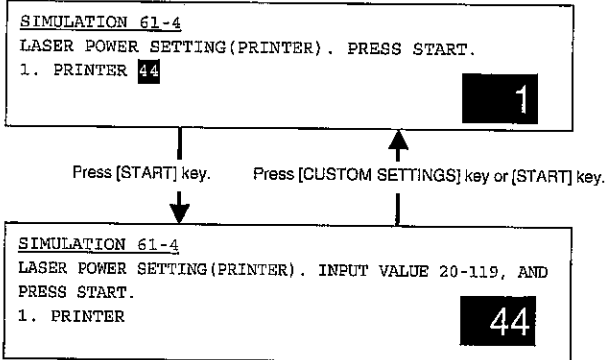
Operation/Procedure

- 1) Select the number corresponding to the adjustment mode with 10-key.
2) Press [START] key.
3) Enter the adjustment value with 10-key.

| Set range | 32 - 82 |
|-----------|--|
| Default | 44 (AR-M550N/U, AR-M620N/U) 38 (AR-M700N/U) |

- 4) Enter [START] key.

NOTE: Be sure to set the default value. If not, a trouble may occur in the LSU.



62-1

| | |
|--------------------|-------------------------------|
| Purpose | Data clear |
| Function (Purpose) | Used to format the hard disk. |
| Section | MFP controller (HDD) |
| Item | Clear |

Operation/Procedure

1) Select YES/NO of hard disk format.

| | | |
|---|-----|-----------|
| 1 | YES | Execution |
| 2 | NO | Cancel |

2) Press [START] key.

During formatting, "EXECUTING" is displayed. When formatting is completed normally, "OK" is displayed. If not, "NG" is displayed.

SIMULATION 62-1
HDD FORMAT.
ARE YOU SURE?
1. YES
2. NO

Press [START] key.

SIMULATION 62-1
HDD FORMAT. EXECUTING...

Completion

Press [CUSTOM SETTINGS] key.

SIMULATION 62-1
HDD FORMAT. OK. (or NG)

62-2

| | |
|--------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the hard disk (read/write). (Only in the model with a disk installed) (Partial check) |
| Section | MFP controller (HDD) |
| Item | Operation |

Operation/Procedure

1) Select YES/NO of hard disk read/write check.

| | | |
|---|-----|-----------|
| 1 | YES | Execution |
| 2 | NO | Cancel |

2) Press [START] key.

During testing, "EXECUTING" is displayed. When test is completed normally, "OK" is displayed. If not, "NG" is displayed.

SIMULATION 62-2
HDD R/W TEST.
ARE YOU SURE?
1. YES
2. NO

Press [START] key.

SIMULATION 62-2
HDD R/W TEST. EXECUTING...

Completion

Press [CUSTOM SETTINGS] key.

SIMULATION 62-2
HDD R/W TEST. OK. (or NG)

62-3

| | |
|--------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the hard disk (read/write). (All areas check) |
| Section | MFP controller (HDD) |
| Item | Operation |

Operation/Procedure

1) Select YES/NO of hard disk read/write check.

| | | |
|---|-----|-----------|
| 1 | YES | Execution |
| 2 | NO | Cancel |

2) Press [START] key.

During testing, "EXECUTING" is displayed. When test is completed normally, "OK" is displayed. If not, "NG" is displayed.

SIMULATION 62-3
HDD R/W TEST(ALL).
ARE YOU SURE?
1. YES
2. NO

Press [START] key.

SIMULATION 62-3
HDD R/W TEST(ALL). EXECUTING...

Completion

Press [CUSTOM SETTINGS] key.

SIMULATION 62-3
HDD R/W TEST(ALL). OK. (or NG)

62-6

| | |
|--------------------|---|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the hard disk. (The self diag operation of the SMART function is executed.) |
| Section | MFP controller (HDD) |
| Item | Clear |

Operation/Procedure

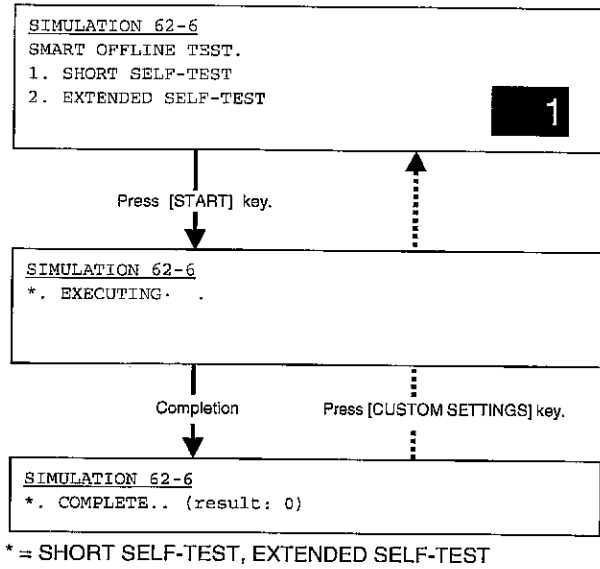
1) Select the number corresponding to the self diag check mode.

| | | |
|---|--------------------|----------------|
| 1 | SHORT SELF-TEST | Partial test |
| 2 | EXTENDED SELF-TEST | All areas test |

2) Press [START] key.

During the self diag operation, "EXECUTING" is displayed.

If the self diag is completed normally, "0" is displayed. If not, any value but 0 is displayed.



| | |
|--------------------|--|
| 62-7 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operations of the hard disk. (The result of the self diag operation of the SMART function is printed out.) |
| Section | MFP controller (HDD) |
| Item | Clear |

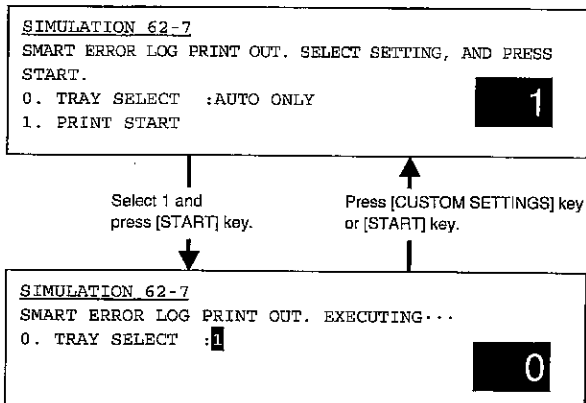
Operation/Procedure

1) Enter 1 with 10-key.

| | | |
|---|-------------|---|
| 0 | TRAY SELECT | Tray select auto only (Selection inhibited) |
| 1 | PRINT START | Print start |

2) Press [START] key.

The result of the hard disk operation check (the self diag operation of the SMART function) is printed out.



| | |
|--------------------|--|
| 62-8 | |
| Purpose | Data clear |
| Function (Purpose) | Used to format the hard disk (the system area excluded). |
| Section | MFP controller (HDD) |
| Item | Clear |

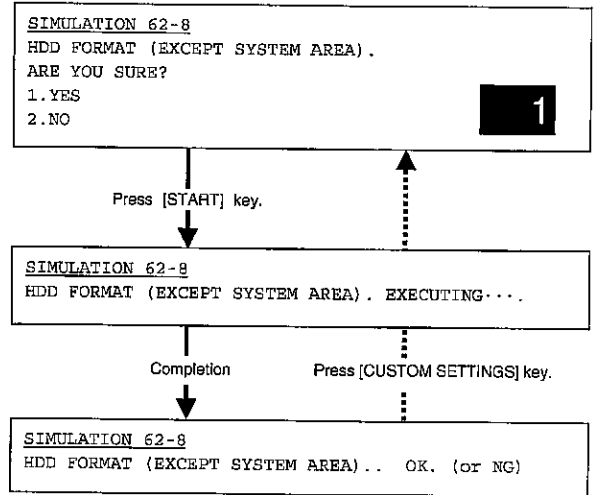
Operation/Procedure

1) Select YES/NO of hard disk (the system area excluded) format.

| | | |
|---|-----|-----------|
| 1 | YES | Execution |
| 2 | NO | Cancel |

2) Press [START] key.

During formatting, "EXECUTING" is displayed. When formatting is completed normally, "OK" is displayed. If not, "NG" is displayed.



| | |
|--------------------|--|
| 62-10 | |
| Purpose | Data clear |
| Function (Purpose) | Used to delete a job complete list (also to delete job log data) |
| Section | MFP controller (HDD) |
| Item | Clear |

Operation/Procedure

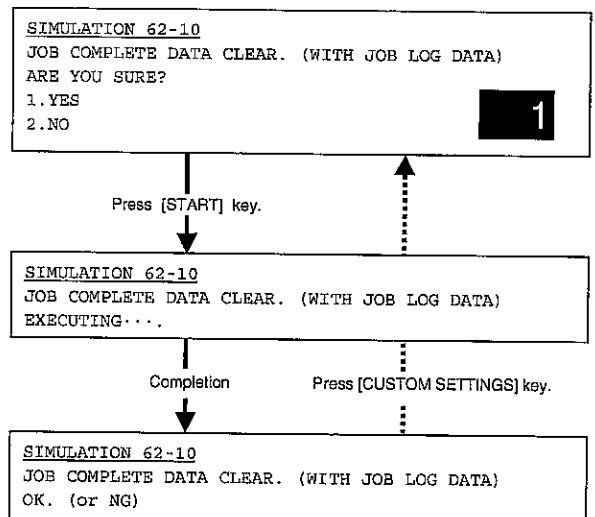
1) Select YES/NO of deleting the job complete list.

| | | |
|---|-----|-----------|
| 1 | YES | Execution |
| 2 | NO | Cancel |

2) Press [START] key.

During formatting, "EXECUTING" is displayed. When formatting is completed normally, "OK" is displayed. If not, "NG" is displayed.

NOTE: When executed, this function also deletes the complete queues of E-MAIL, FAX and IFAX, reservation data associated with the image send function, bulletin board data, and confidential data.



62-11

| | |
|-----------------------|---|
| Purpose | Data clear |
| Function (Purpose) | Used to delete document filing data. (The management area (standard folder, user folder) is cleared.) |
| Section | MFP controller (HDD) |
| Item | Clear |

Operation/Procedure

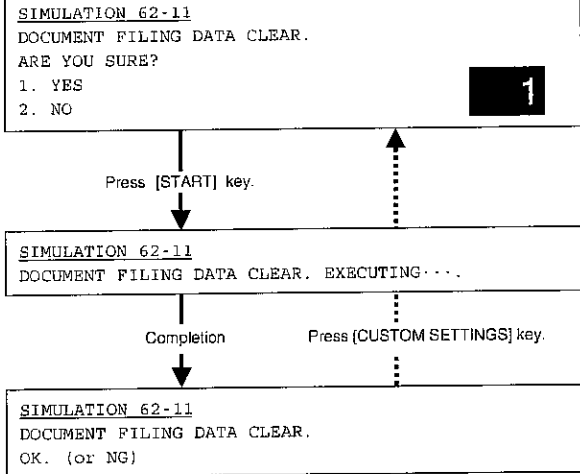
1) Select YES/NO of deleting the document filing data.

| | | |
|---|-----|-----------|
| 1 | YES | Execution |
| 2 | NO | Cancel |

2) Press [START] key.

During formatting, "EXECUTING" is displayed. When formatting is completed normally, "OK" is displayed. If not, "NG" is displayed.

NOTE: When executed, this function internally executes the same function as SIM66-10; deleting reservation data, bulletin board data, and confidential data.



63

63-1

| | |
|-----------------------|--|
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to check the result of shading correction. (The shading correction data are displayed.) |
| Section | Optical (Image scanning) |
| Item | Operation |

Operation/Procedure

| | |
|--------------------------------------|---|
| CCD data | |
| FRONT ODD GAIN | Front odd-number pixel gain adjustment value |
| FRONT EVEN GAIN | Front even-number pixel gain adjustment value |
| FRONT OFFSET | Front black difference |
| REAR ODD GAIN | Rear odd-number pixel gain adjustment value |
| REAR EVEN GAIN | Rear even-number pixel gain adjustment value |
| REAR OFFSET | Rear black difference |
| MIN | All pixels min. value |
| MAX | All pixels max. value |
| AVE | All pixels average value |
| CIS data (Only when DSPF installed.) | |
| GAIN | Gain adjustment value |
| MAX | Pixel max. |
| MIN | Pixel min. |
| AVE | Pixel average |
| OFFSET | Black difference |
| DEV | Standard deviation |

| | | |
|---|----------------------|-----------|
| SIMULATION 63-1 SHADING DATA DISPLAY. (CCD) | | |
| FRONT ODD GAIN: 128 | FRONT EVEN GAIN: 255 | |
| FRONT OFFSET: 2 | | |
| REAR ODD GAIN: 128 | REAR EVEN GAIN: 255 | |
| REAR OFFSET: 2 | | |
| MIN.: 255 | MAX.: 0 | AVE.: 255 |
| (CIS) | | |
| GAIN: 128 | OFFSET: 0 | MAX.: 255 |
| MIN.: 255 | AVE.: 255 | DEV.: 0 |

63-2

| | |
|-----------------------|--------------------------|
| Purpose | Adjustment |
| Function (Purpose) | Used to execute shading. |
| Section | Optical (Image scanning) |
| Item | Operation |

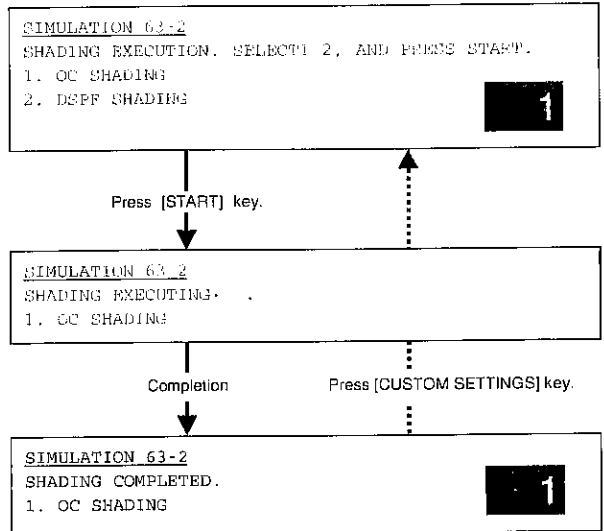
Operation/Procedure

1) Enter the number corresponding to the shading mode to be executed.

| | | |
|---|--------------|---|
| 1 | OC SHADING | OC analog level correction and shading correction (Document table mode) |
| 2 | DSPF SHADING | DSPF analog level correction and shading correction |

2) Press [START] key.

During execution, "EXECUTING" is displayed. When execution is completed normally, "COMPLETED" is displayed.



63-7

| | |
|-----------------------|---|
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the white plate scan start position for shading. (Document table mode) |
| Section | Laser (Exposure) |
| Item | Operation |

Operation/Procedure

1) Enter 1 with 10-key.

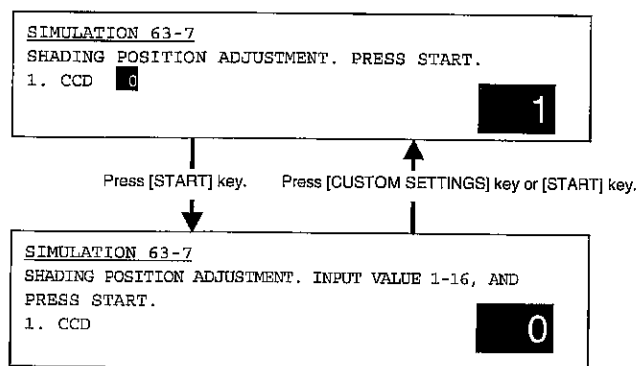
2) Press [START] key.

3) Enter the adjustment value with 10-key.

4) Press [START] key.

When a shading error occurs, this adjustment value is changed.

| | Item | Set range | Default |
|---|------|-----------|---------|
| 1 | CCD | CCD scan | 1 - 16 |
| | | | 6 |



64

64-1

| | |
|---------------------------|---|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the printer section (self-print operation), (The print pattern, the paper feed mode, the print mode, the print quantity, and the density can be optionally set.) |
| Section | |
| Item | Operation |

Operation/Procedure

(Various print patterns output) (Table 1)

- 1) Select PRINT PATTERN with 10-key.
- 2) Enter the number corresponding to the print pattern to be printed with 10-key.
- 3) Press [START] key.
- 4) Select PRINT START with 10-key.
- 5) Press [START] key.

(Print condition setting in this simulation)

* To select paper (paper feed tray), perform the following procedures.

- 1) Select TRAY SELECT with 10-key.
- 2) Press [START] key.
- 3) Enter the number corresponding to the paper feed tray of the target paper with 10-key.
- 4) Press [START] key. (The paper feed tray is selected.)

* To adjust the print density, perform the following procedures.

- 1) Select DENSITY with 10-key.
- 2) Enter the adjustment value with 10-key.
- 3) Press [START] key.

* To set the print quantity, perform the following procedures.

- 1) Select MULTI with 10-key.
- 2) Enter the print quantity with 10-key.
- 3) Press [START] key.

* To set the print quality mode, perform the following procedures.

- 1) Select MODE with 10-key.
- 2) Enter the number corresponding to the print quality mode with 10-key.
- 3) Press [START] key.

* To set the print level, perform the following procedures.

- 1) Select LEVEL with 10-key.
- 2) Enter the adjustment value with 10-key.
- 3) Press [START] key.

NOTE: In some print patterns, changing the level may not change the picture quality.

* To set duplex/simplex print, perform the following procedures.

- 1) Select DUPLEX with 10-key.
- 2) Enter the number corresponding to the operation mode with 10-key.
- 3) Press [START] key.

(Table 1)

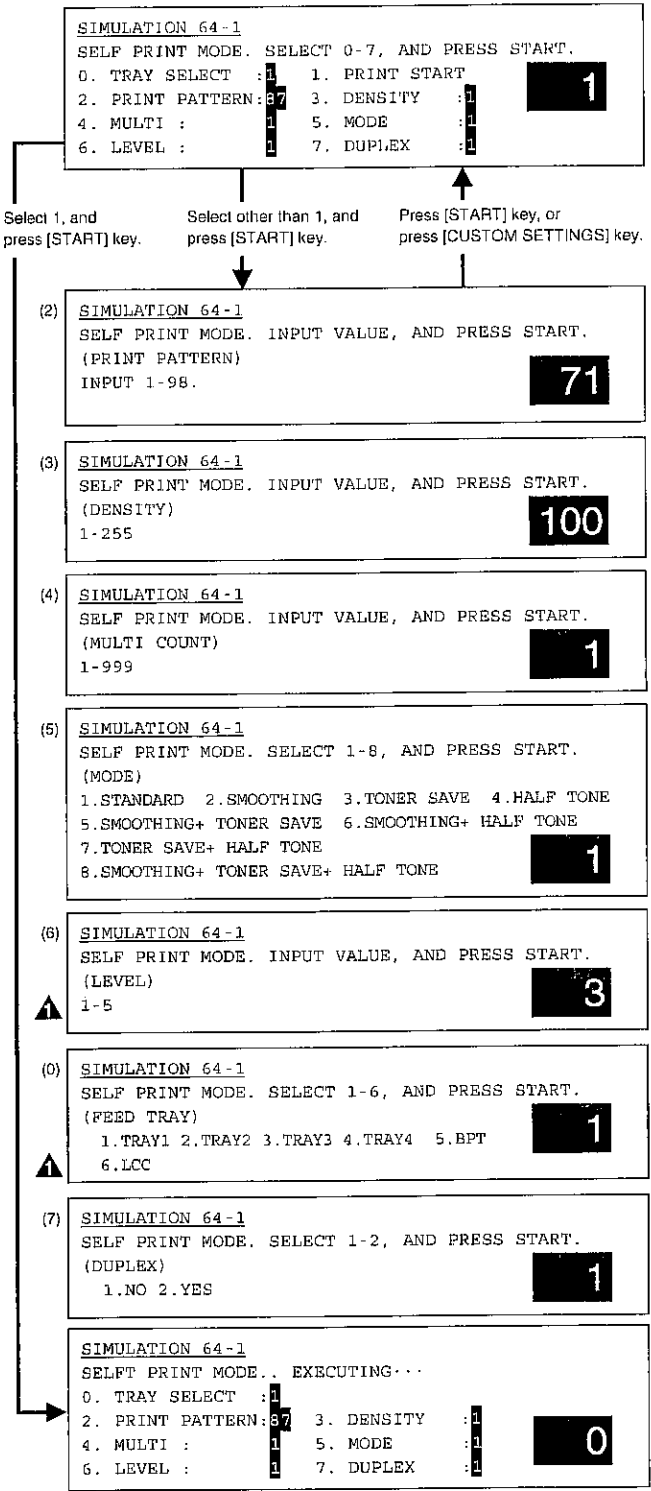
| | | |
|---|---|---|
| 0 | TRAY SELECT 1. TRAY1 2. TRAY2 3. TRAY3 4. TRAY4 5. BPT 6. LCC | Paper feed tray 1: Tray 1 2: Tray 2 3: Tray 3 4: Tray 4 5: Manual feed 6: LCC |
| 1 | PRINT START | Print execution (Printing of the set data is executed.) |
| 2 | PRINT PATTERN | Print pattern (Note 1) |
| 3 | DENSITY | Graphic density (Valid only when No. 79, 80 or 84 is selected.) |
| 4 | MULTI | Print quantity |
| 5 | MODE 1. STANDARD 2. SMOOTHING 3. TONER SAVE 4. HALF TONE 5. SMOOTHING + TONER SAVE 6. SMOOTHING + HALF TONE 7. TONER SAVE + HALF TONE 8. SMOOTHING + TONER SAVE + HALF TONE | Print mode 1. Standard 2. Smoothing ON 3. Smoothing ON 4. Half tone ON 5. Smoothing + toner save 6. Smoothing + half tone 7. Toner save + half tone 8. Smoothing + toner save + half tone |
| 6 | LEVEL | (Parameter of print image process) |
| 7 | DUPLEX 1. NO 2. YES | Duplex 0: NO (Simplex) 1: YES (Duplex) |

(Note 1) Print pattern

| NO | ENGINE PATTERN | CONTROLLER | PATTERN |
|----|----------------|------------|-----------------------------------|
| 1 | ○ | | For off-center adjustment |
| 2 | ○ | | Main scanning direction 1 by 5 |
| 3 | ○ | | Main scanning direction 1mm-pitch |
| 4 | ○ | | Main scanning direction 3 by 3 |
| 5 | ○ | | Sub scanning direction 1 by 1 |
| 6 | ○ | | Sub scanning direction 1 by 5 |
| 7 | ○ | | Sub scanning direction 2 by 4 |
| 8 | ○ | | Sub scanning direction 3 by 3 |
| 9 | ○ | | Right oblique 1 by 2 |
| 10 | ○ | | Right oblique 1 by 5 |
| 11 | ○ | | Right oblique 2 by 4 |
| 12 | ○ | | Right oblique 3 by 3 |
| 13 | ○ | | Left oblique 1 by 2 |
| 14 | ○ | | Left oblique 1 by 5 |
| 15 | ○ | | Left oblique 2 by 4 |
| 16 | ○ | | Left oblique 3 by 3 |
| 17 | ○ | | Dot 1 by 1 |
| 18 | ○ | | Dot 3 by 3 |
| 19 | ○ | | Dot |
| 20 | ○ | | Solid black |
| 21 | ○ | | Main scanning direction 1 by 1 |
| 22 | ○ | | Main scanning direction 5 by 1 |
| 23 | ○ | | Main scanning direction 4 by 2 |
| 24 | ○ | | Main scanning direction 3 by 3 |
| 25 | ○ | | Sub scanning direction 1 by 1 |
| 26 | ○ | | Sub scanning direction 5 by 1 |
| 27 | ○ | | Sub scanning direction 4 by 2 |
| 28 | ○ | | Sub scanning direction 3 by 3 |
| 29 | ○ | | Right oblique 2 by 1 |
| 30 | ○ | | Right oblique 5 by 1 |
| 31 | ○ | | Right oblique 4 by 2 |
| 32 | ○ | | Right oblique 3 by 3 |

| NO | ENGINE PATTERN | CONTROLLER | PATTERN |
|----|-------------------|------------|--|
| 33 | ○ | | Left oblique 2 by 1 |
| 34 | ○ | | Left oblique 5 by 1 |
| 35 | ○ | | Left oblique 4 by 2 |
| 36 | ○ | | Left oblique 3 by 3 |
| 37 | ○ | | Dot 1 by 1 |
| 38 | ○ | | Dot 3 by 3 |
| 39 | ○ | | Dot |
| 40 | ○ | | Solid white |
| 50 | | ○ | All surface 1 by 1 (Vertical) |
| 51 | | ○ | All surface 1 by 1 (Horizontal) |
| 52 | | ○ | All surface 1 by 2 (Vertical) |
| 53 | | ○ | All surface 1 by 2 (Horizontal) |
| 54 | | ○ | All surface 1 by 3 (Vertical) |
| 55 | | ○ | All surface 1 by 3 (Horizontal) |
| 56 | | ○ | All surface 1 by 4 (Vertical) |
| 57 | | ○ | All surface 1 by 4 (Horizontal) |
| 58 | | ○ | All surface 1 by 5 (Vertical) |
| 59 | | ○ | All surface 1 by 5 (Horizontal) |
| 60 | | ○ | All surface 2 by 2 (Vertical) |
| 61 | | ○ | All surface 2 by 2 (Horizontal) |
| 62 | | ○ | All surface 2 by 3 (Vertical) |
| 63 | | ○ | All surface 2 by 3 (Horizontal) |
| 64 | | ○ | All background |
| 65 | | ○ | Special pattern |
| 66 | | □ | For every other 1 block width 128 pixels/ 32 gradations |
| 67 | | □ | For every other 1 block width 128 pixels/ 16 gradations |
| 68 | | □ | For every other 1 block width 128 pixels/ 8 gradations |
| 69 | | ○ | 1-dot pattern |
| 70 | | ○ | Print adjustment pattern with scale (Vertical) |
| 71 | | ○ | Grid pattern |
| 72 | | ○ | Slant line 45 degrees |
| 73 | | ○ | Slant line 26.6 degrees |
| 74 | | ○ | Slant line 63.4 degrees |
| 75 | | ○ | ID/BG pattern |
| 76 | | ○ | Dot pattern 12.5% |
| 77 | | ○ | Dot pattern 28% |
| 78 | | ○ | Dot pattern 50% |
| 79 | | □ | All surface effort diffusion background |
| 80 | | ○ | All surface dither process background |
| 81 | | ○ | For every other 1 block width 128 pixels/ 32 gradations |
| 82 | | ○ | For every other 1 block width 128 pixels/ 16 gradations |
| 83 | | ○ | For every other 1 block width 128 pixels/ 8 gradations |
| 84 | | ○ | Memory check pattern |
| 85 | | ○ | Cleaning check pattern |
| 86 | | ○ | Offset check pattern |
| 87 | | ○ | Test B image (For aging) |
| 88 | | ○ | 6% printer chart |
| 89 | | ○ | 5% printer chart |
| 90 | | | Toner quantity measuring chart |
| 91 | | | Radiation chart |
| 98 | | | Data printing |

□: Error diffusion process



65

65-1

| | |
|--------------------|--|
| Purpose | Adjustment |
| Function (Purpose) | Used to adjust the touch panel (LCD display section) detection position. |
| Section | Operation (Display/Operation key) |
| Item | |

Operation/Procedure

Touch the four cross marks (+) sequentially. The coordinates of pressed positions are set.

When the coordinates setting is completed normally, the display turns gray. When all the four points are set, the display returns to the normal state.

SIMULATION 65-1



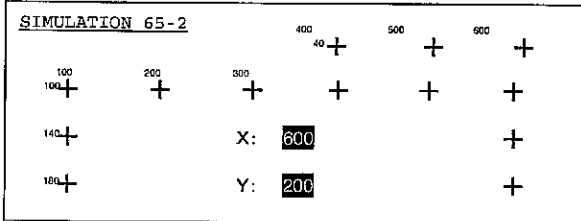
65-2

| | |
|--------------------|---|
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to check the result of the touch panel (LCD display) detection position adjustment. (The coordinates are displayed.) |
| Section | Operation (Display/Operation key) |
| Item | |

Operation/Procedure

When the touch panel is touched, the X and Y coordinate values of the touched point and the coordinate values of the specified point are displayed. The coordinate values set with SIM 65-1 are used as the reference.

SIMULATION 65-2



66

66-1

| | |
|--------------------|--|
| Purpose | Setting |
| Function (Purpose) | Used to change and check the FAX soft switch functions. (Used to change and check the functions provided for the FAX soft switches.) |
| Section | FAX |
| Item | |

Operation/Procedure

Setting of soft switches other than SW1 can be changed and checked.

- 1) Enter the soft switch number to be checked or changed with 10-key.

The current set state is displayed.

- 2) Enter the number corresponding to the bit to be changed with 10-key.
(Example) When the bit of 5 is to be changed, enter 5.
The set value of 1/0 is alternatively changed every time when the target key is pressed.
- 3) After completion of setting of all the bits, press [START] key.

SIMULATION 66-1

FAX SOFT SW. SETTING. SELECT 2-120, AND PRESS START.

1

Press [START] key.

Press [CUSTOM SETTINGS] key or [START] key.

SIMULATION 66-1

FAX SOFT SW. SETTING. INPUT DATA No(1-8), AND PRESS START.

OFT SW-2:

1 2 3 4 5 6 7 8
00001001

66-2

| | |
|--------------------|---|
| Purpose | Data clear |
| Function (Purpose) | Used to clear the FAX soft switch function data and to set to the default. (Excluding the adjustment values.) |
| Section | FAX |
| Item | Data |

Operation/Procedure

- 1) Set the destination code with 10-key.

| | | | |
|------------|-----------------|-------------|-----------------|
| Japan | 0 0 0 0 0 0 0 0 | Finland | 0 0 1 1 1 1 0 0 |
| U.S.A. | 1 0 1 1 0 1 0 1 | Norway | 1 0 0 0 0 0 1 0 |
| Australia | 0 0 0 0 1 0 0 1 | Denmark | 0 0 1 1 0 0 0 1 |
| U.K. | 1 0 1 1 0 1 0 0 | Netherlands | 0 1 1 1 1 0 1 1 |
| France | 0 0 1 1 1 1 0 1 | Italy | 0 1 0 1 1 0 0 1 |
| Germany | 0 0 0 0 0 1 0 0 | Switzerland | 1 0 1 0 0 1 1 0 |
| Sweden | 1 0 1 0 0 1 0 1 | Austria | 0 0 0 0 1 0 1 0 |
| Newzealand | 0 1 1 1 1 1 1 0 | Indonesia | 0 1 0 1 0 1 0 0 |
| China | 0 0 1 0 0 1 1 0 | Thailand | 1 0 0 1 0 0 1 1 |
| Singapore | 1 0 0 1 1 1 0 0 | Malaysia | 0 1 1 0 1 1 0 0 |
| TW | 1 1 1 1 1 1 1 0 | India | 0 1 0 1 0 0 1 1 |
| Other1 | 1 1 1 1 1 1 0 1 | Philippines | 1 0 0 0 1 0 0 1 |
| Other2 | 1 1 1 1 1 1 0 0 | Hongkong | 0 1 0 1 0 0 0 0 |
| Other3 | 1 1 1 1 1 0 1 1 | | |

The codes other than the above are recognized as Japan.

- 2) Press [START] key.
- 3) The confirmation menu of YES/NO of clear is displayed. Select one.

| | | |
|---|-----|-------------------------|
| 1 | YES | FAX soft SW is cleared. |
| 2 | NO | Not cleared. |

- 4) Press [START] key.

The soft switch (except for the adjustment values) is cleared according to the destination selected in procedure 1).

NOTE: When the FAX BOX is not installed, initialization including the adjustment value is performed. (The adjustment value is stored in the FAX BOX.)

SIMULATION 66-2
 FAX SOFT SW. CLEAR(WITHOUT ADJUSTMENT VALUE).
 INPUT COUNTRY CODE, AND PRESS START.

1 2 3 4 5 6 7 8
00000000

Press [START] key.

SIMULATION 66-2
 FAX SOFT SW. CLEAR.
 ARE YOU SURE?

JAPAN

1: YES
 2: NO

1

66-3

| | |
|---------------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the FAX PWB memory (read/write). (This adjustment is required when the PWB is replaced with a new one.) |
| Section | FAX |
| Item | Data |

Operation/Procedure

- 1) Enter the number corresponding to the memory to be checked with 10-key.
- 2) Press [START] key.

In the case of All, all memories are checked only once.

| | |
|----------------------------|-------------------|
| Check connection wire list | |
| NO CHECK | Not checked yet. |
| CHECKING | Checking |
| OK | Check complete OK |
| NG | Check complete NG |

The error address or the data line is displayed individually.

| | |
|------------------------|-----------|
| Target memory of check | |
| MFP SRAM | SRAM |
| MFP FLASH | FLASH ROM |
| MFP OP.FLASH | |
| MODEM EEPROM | |
| MODEM SRAM (G/A) | |
| MODEM SRAM | |
| MODEM SDRAM | |

When "repeat" is selected, the operation is repeated until the result is "NG" or [CUSTOMSETTING] is pressed.

SIMULATION 66-3
 FAX PWB MEMORY CHECK INPUT 1-13, AND PRESS START.

1. All Memory Device Check (once)
2. MFP SRAM(once)
3. MFP SRAM(repeat)
4. MFP FLASH+ OP.FLASH(once)
5. MFP FLASH+ OP>FLASH(repeat)
6. MODEM EEPROM(once)
7. MODEM EEPROM(repeat)
8. MODEM SRAM(G/A)(once)
9. MODEM SRAM(G/A)(repeat)
10. MODEM SRAM(once)
11. MODEM SRAM(repeat)
12. MODEM SDRAM(once)
13. MODEM SDRAM(repeat)

Press [START] key.

Press [CUSTOM SETTINGS] key.

SIMULATION 66-3
 FAX PWB MEMORY CHECK
 MFP SRAM: CHECKING
 MFP FLASH: NO CHECK
 MFP OP.FLASH: NO CHECK
 MODEM EEPROM: NG:AD010000
 MODEM SRAM(G/A):NO CHECK
 MODEM SRAM: NO ATT
 MODEM SDRAM: OK

When "repeat" is selected and [CUSTOM SETTINGS] key is pressed

When Check is "once," the display stops at the result display. When [CUSTOM SETTINGS] key is pressed, the display returns to the initial display.

66-4

| | |
|---------------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the output operation of data signals in each data output mode of FAX. (Used to check the operation of MODEM.) Send level: Max. (Only when FAX is installed) |
| Section | FAX |
| Item | Operation |

Operation/Procedure

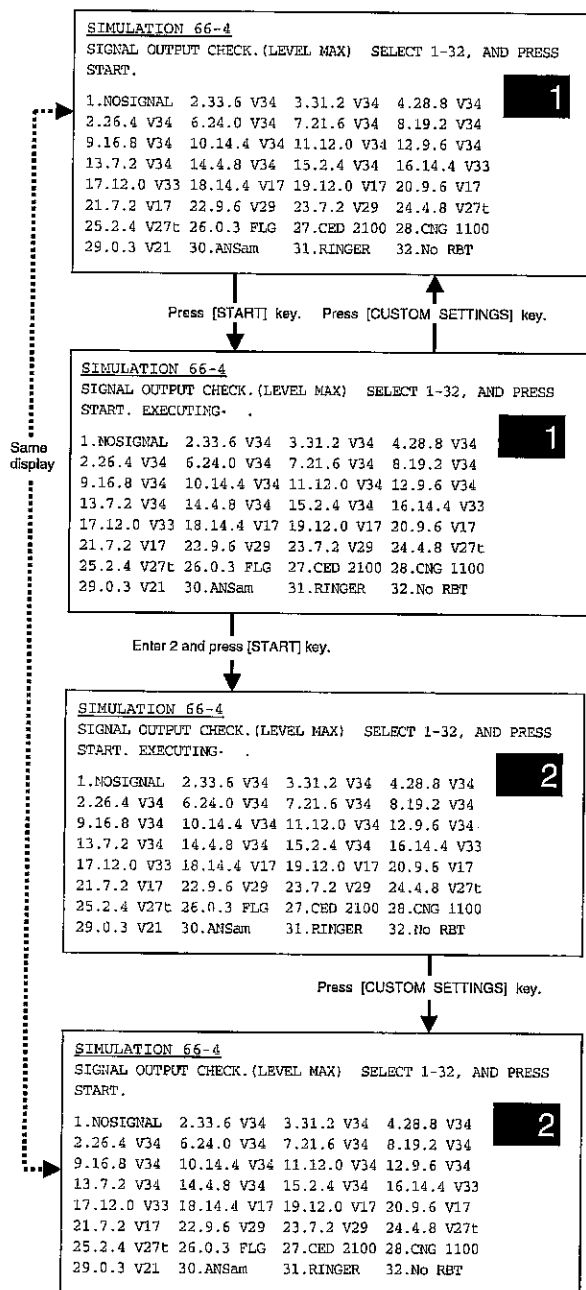
- 1) Enter the number corresponding to the output mode with 10-key.
- 2) Press [START] key.

The output is delivered at the max. send level.

| | | | | | |
|----|----------|-----------|----|----------|----------|
| 1 | NOSIGNAL | No signal | 17 | 12.0 V33 | 12.0 V33 |
| 2 | 33.6 V34 | 26.4 V34 | 18 | 14.4 V17 | 14.4 V17 |
| 3 | 31.2 V34 | 31.2 V34 | 19 | 12.0 V17 | 12.0 V17 |
| 4 | 28.8 V34 | 28.8 V34 | 20 | 9.6 V17 | 9.6 V17 |
| 5 | 26.4 V34 | 26.4 V34 | 21 | 7.2 V17 | 7.2 V17 |
| 6 | 24.0 V34 | 24.0 V34 | 22 | 9.6 V29 | 9.6 V29 |
| 7 | 21.6 V34 | 21.6 V34 | 23 | 7.2 V29 | 7.2 V29 |
| 8 | 19.2 V34 | 19.2 V34 | 24 | 4.8 V271 | 4.8 V271 |
| 9 | 16.8 V34 | 16.8 V34 | 25 | 2.4 V271 | 2.4 V271 |
| 10 | 14.4 V34 | 14.4 V34 | 26 | 0.3 FLG | 0.3 FLG |
| 11 | 12.0 V34 | 12.0 V34 | 27 | CED 2100 | CED 2100 |
| 12 | 9.6 V34 | 9.6 V34 | 28 | CNG 1100 | CNG 1100 |
| 13 | 7.2 V34 | 7.2 V34 | 29 | 0.3 V21 | 0.3 V21 |
| 14 | 4.8 V34 | 4.8 V34 | 30 | ANSam | ANSam |
| 15 | 2.4 V34 | 2.4 V34 | 31 | RINGER | RINGER |
| 16 | 14.4 V33 | 14.4 V33 | 32 | No RBT | No RBT |

When [CUSTOM SETTINGS] key is pressed during execution, execution is stopped.

When a number is entered and [START] key is pressed during execution, the kind of signal can be changed.



66-5

| | |
|---------------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the output operation of data signals in each data output mode of FAX. (Used to check the operation of MODEM.) An output is sent at the send level set by the soft switch. (Only when FAX is installed) |
| Section | FAX |
| Item | Operation |

Operation/Procedure

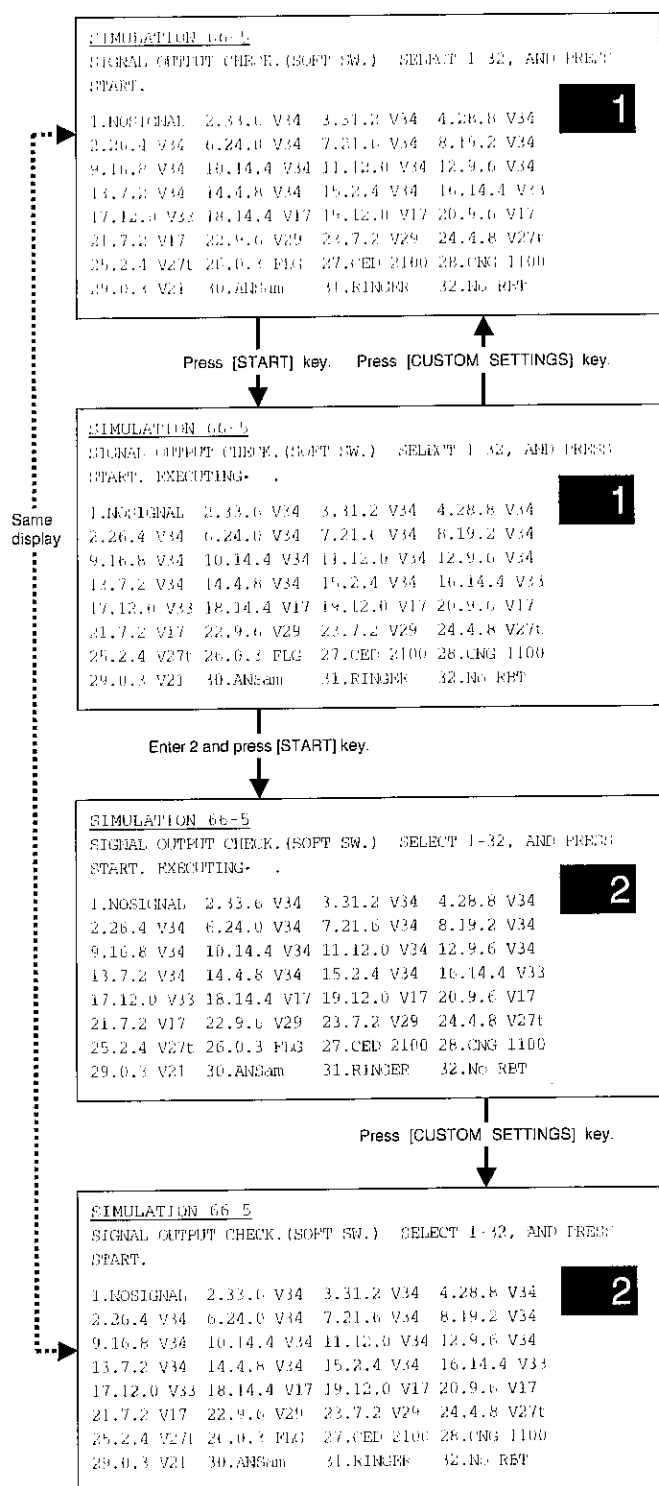
- 1) Enter the number corresponding to the output mode with 10-key.
- 2) Press [START] key.

The output is delivered at the send level set with the soft switch.

| | | | | | |
|----|----------|-----------|----|----------|----------|
| 1 | NOSIGNAL | No signal | 17 | 12.0 V33 | 12.0 V33 |
| 2 | 33.6 V34 | 26.4 V34 | 18 | 14.4 V17 | 14.4 V17 |
| 3 | 31.2 V34 | 31.2 V34 | 19 | 12.0 V17 | 12.0 V17 |
| 4 | 28.8 V34 | 28.8 V34 | 20 | 9.6 V17 | 9.6 V17 |
| 5 | 26.4 V34 | 26.4 V34 | 21 | 7.2 V17 | 7.2 V17 |
| 6 | 24.0 V34 | 24.0 V34 | 22 | 9.6 V29 | 9.6 V29 |
| 7 | 21.6 V34 | 21.6 V34 | 23 | 7.2 V29 | 7.2 V29 |
| 8 | 19.2 V34 | 19.2 V34 | 24 | 4.8 V27t | 4.8 V27t |
| 9 | 16.8 V34 | 16.8 V34 | 25 | 2.4 V27t | 2.4 V27t |
| 10 | 14.4 V34 | 14.4 V34 | 26 | 0.3 FLG | 0.3 FLG |
| 11 | 12.0 V34 | 12.0 V34 | 27 | CED 2100 | CED 2100 |
| 12 | 9.6 V34 | 9.6 V34 | 28 | CNG 1100 | CNG 1100 |
| 13 | 7.2 V34 | 7.2 V34 | 29 | 0.3 V21 | 0.3 V21 |
| 14 | 4.8 V34 | 4.8 V34 | 30 | ANSam | ANSam |
| 15 | 2.4 V34 | 2.4 V34 | 31 | RINGER | RINGER |
| 16 | 14.4 V33 | 14.4 V33 | 32 | No RBT | No RBT |

When [CUSTOM SETTINGS] key is pressed during execution, execution is stopped.

When a number is entered and [START] key is pressed during execution, the kind of signal can be changed.

66-6

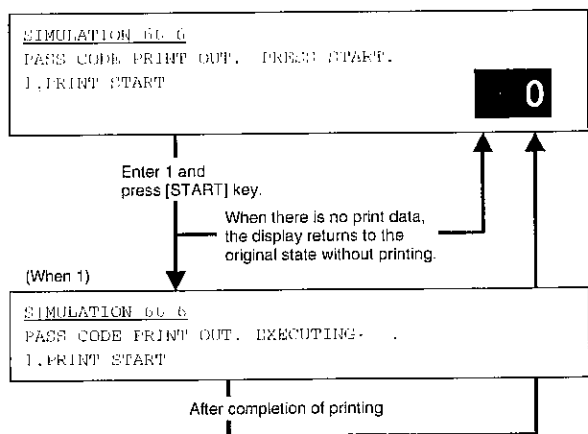
| | |
|---------------------------|---|
| Purpose | User data output/Check (Display/Print) |
| Function (Purpose) | Used to print the confidential pass code. (Used when the confidential pass code is forgotten.) (Only when FAX is installed) |
| Section | FAX |
| Item | Data |

Operation/Procedure

- 1) Enter 1 with 10-key and press [START] key.

| | | |
|---|-------------|-------------|
| 1 | PRINT START | Print start |
|---|-------------|-------------|

The paper is automatically selected with the size saved in the image memory.

66-7

| | |
|---------------------------|---|
| Purpose | User data output/Check (Display/Print) |
| Function (Purpose) | Used to print the image memory data (memory send/receive). (Only when FAX is installed) |
| Section | FAX |
| Item | Data |

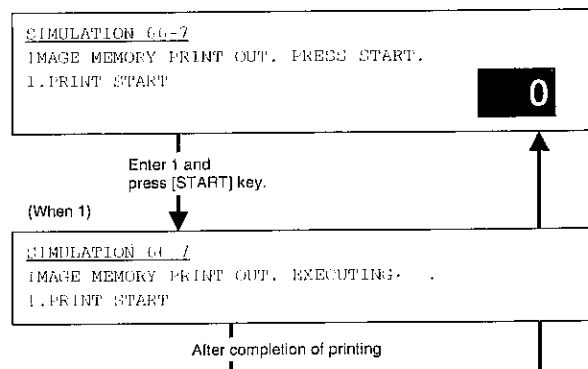
Operation/Procedure

All image data stored in the image memory are printed.

- * The confidential receive data are also printed.

| | | |
|---|-------------|-------------|
| 1 | PRINT START | Print start |
|---|-------------|-------------|

The paper is automatically selected with the size saved in the image memory.



| | |
|---------------------------|---|
| 66-8 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the output operation of various sound signals of FAX. (Used to check the operation of the sound output IC.) Send level: Max. (Only when FAX is installed) |
| Section | FAX |
| Item | Operation |

Operation/Procedure

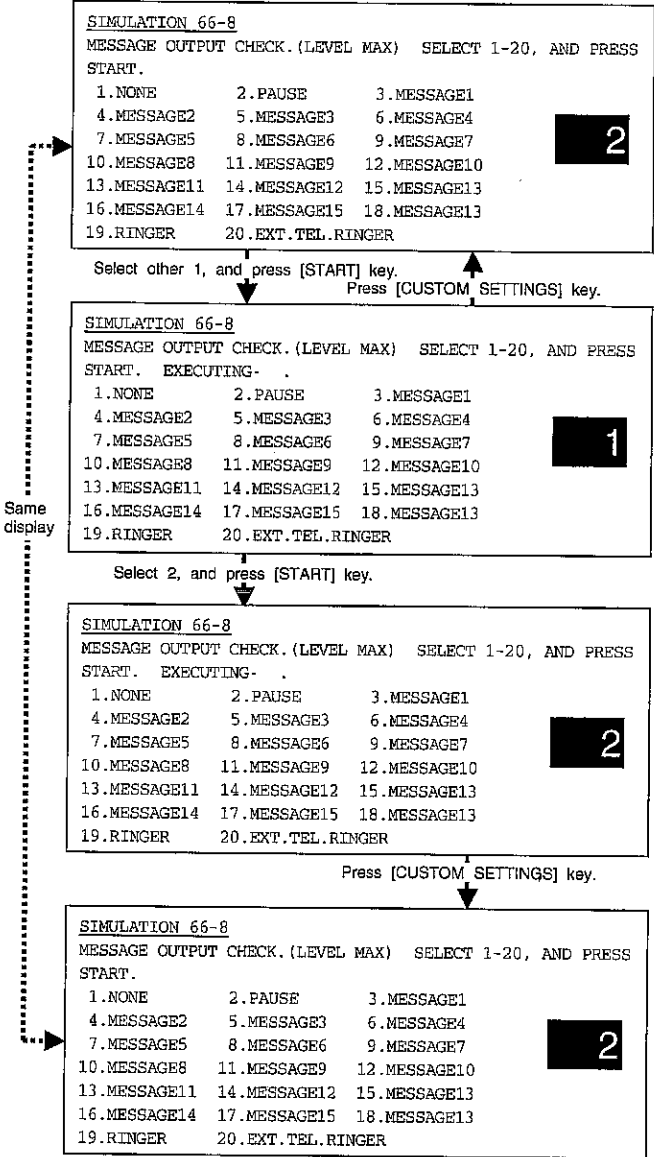
- 1) Enter the number corresponding to the output mode with 10-key.
- 2) Press [START] key.

The output is delivered at the max. level.

| | | | | | |
|----|----------|-------------|----|--------------------|----------------------|
| 1 | NONE | Mute | 11 | MESSAGE 9 | Message 9 |
| 2 | PAUSE | Pause sound | 12 | MESSAGE 10 | Message 10 |
| 3 | MESSAGE1 | Message 1 | 13 | MESSAGE 11 | Message 11 |
| 4 | MESSAGE2 | Message 2 | 14 | MESSAGE 12 | Message 12 |
| 5 | MESSAGE3 | Message 3 | 15 | MESSAGE 13 | Message 13 |
| 6 | MESSAGE4 | Message 4 | 16 | MESSAGE 14 | Message 14 |
| 7 | MESSAGE5 | Message 5 | 17 | MESSAGE 15 | Message 15 |
| 8 | MESSAGE6 | Message 6 | 18 | ALARM | Alarm |
| 9 | MESSAGE7 | Message 7 | 19 | RINGER | Call ring |
| 10 | MESSAGE8 | Message 8 | 20 | EXT.TEL.RIN GER | External TEL ring |

When the number is entered during execution, the kind of signal can be changed.

When [START] key is pressed, the voice message is sent. When [CUSTOM SETTINGS] key is pressed, it is stopped.



| | |
|---------------------------|--|
| 66-9 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the output operation of various sound signals of FAX. (Used to check the operation of the sound output IC.) An output is sent at the send level set by the soft switch. (Only when FAX is installed) |
| Section | FAX |
| Item | Operation |

Operation/Procedure

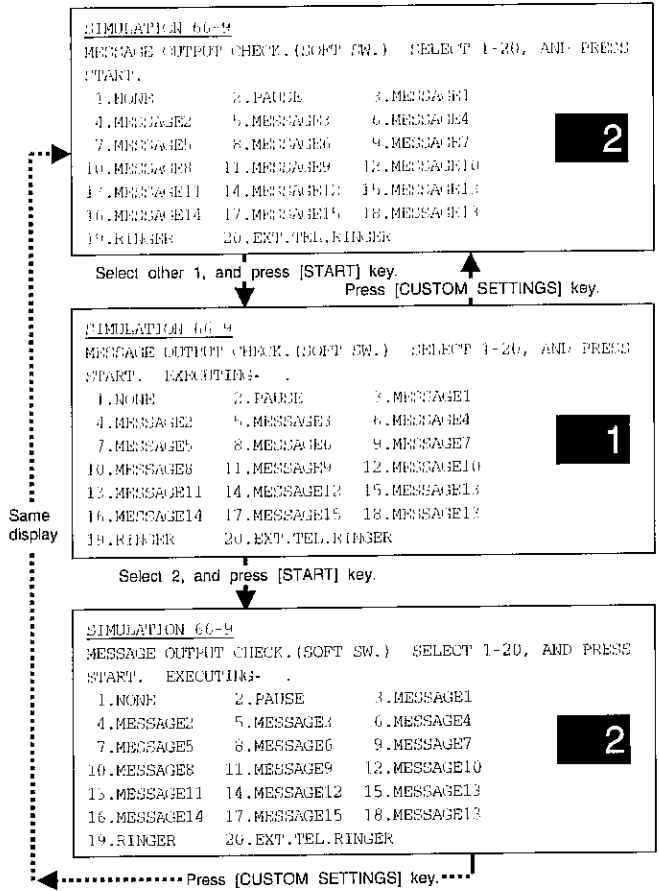
- 1) Enter the number corresponding to the output mode with 10-key.
- 2) Press [START] key.

The output is delivered at the send level set with the soft SW.

| | | | | | |
|----|----------|-------------|----|--------------------|----------------------|
| 1 | NONE | Mute | 11 | MESSAGE 9 | MESSAGE 9 |
| 2 | PAUSE | Pause sound | 12 | MESSAGE10 | MESSAGE 10 |
| 3 | MESSAGE1 | MESSAGE 1 | 13 | MESSAGE11 | MESSAGE 11 |
| 4 | MESSAGE2 | MESSAGE 2 | 14 | MESSAGE12 | MESSAGE 12 |
| 5 | MESSAGE3 | MESSAGE 3 | 15 | MESSAGE13 | MESSAGE 13 |
| 6 | MESSAGE4 | MESSAGE 4 | 16 | MESSAGE14 | MESSAGE 14 |
| 7 | MESSAGE5 | MESSAGE 5 | 17 | MESSAGE15 | MESSAGE 15 |
| 8 | MESSAGE6 | MESSAGE 6 | 18 | ALARM | Alarm |
| 9 | MESSAGE7 | MESSAGE 7 | 19 | RINGER | Call ring |
| 10 | MESSAGE8 | MESSAGE 8 | 20 | EXT.TEL.RING ER | External TEL ring |

When the number is entered during execution, the kind of signal can be changed.

When [START] key is pressed, the voice message is sent. When [CUSTOM SETTINGS] key is pressed, it is stopped.



| | |
|--------------------|---|
| 66-10 | |
| Purpose | User data output/Check (Display/Print) |
| Function (Purpose) | Used to clear all data of the image memory (memory send/receive). The confidential data are also cleared at the same time. (Only when FAX is installed) |
| Section | FAX |
| Item | Data |

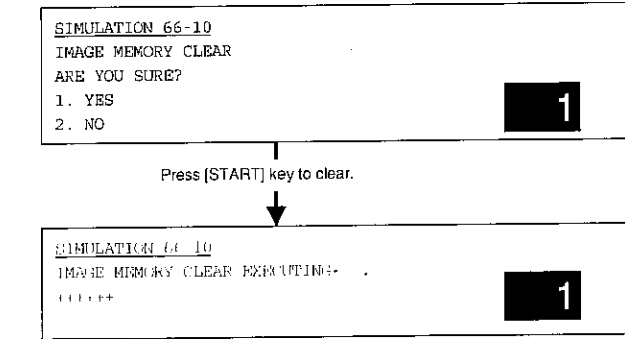
Operation/Procedure

1) Select YES/NO of image memory clear with 10-key.

| | | |
|---|-----|---------------------------------|
| 1 | YES | Image memory clear is executed. |
| 2 | NO | Clear is not executed. |

2) Press [START] key.

The SRAM image data management table and image data in the Flash ROM area and HD (except for filling images) are cleared.



The processing status of image memory clear is displayed with "+."

| | |
|--------------------|---|
| 66-11 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the output operation of FAX G3 mode 300bps. (Used to check the operation of MODEM.) Send level: Max. (Only when FAX is installed) |
| Section | FAX |
| Item | Operation |

Operation/Procedure

1) Select the number corresponding to the output mode with 10-key.

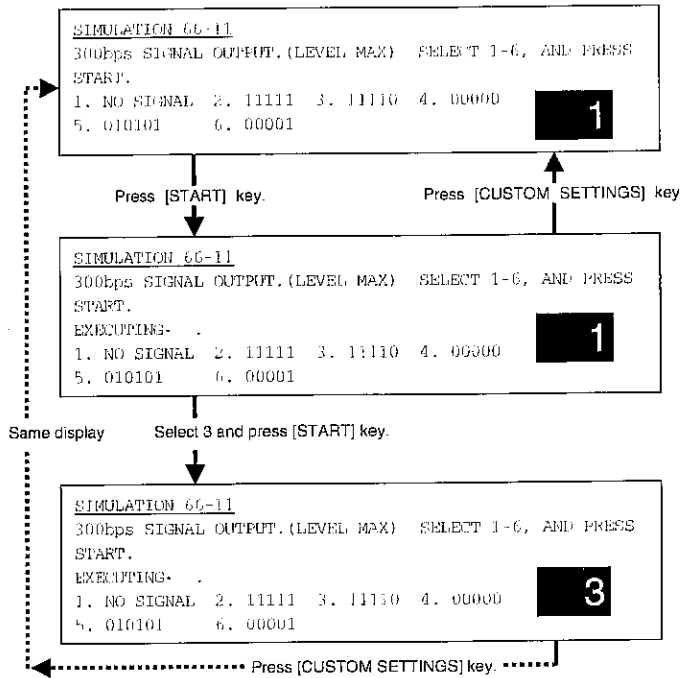
2) Press [START] key.

The signal is sent in the max. send level.

| | | | | | |
|---|-----------|-----------|---|--------|--------|
| 1 | NO SIGNAL | No signal | 4 | 00000 | 00000 |
| 2 | 11111 | 11111 | 5 | 010101 | 010101 |
| 3 | 11110 | 11110 | 6 | 00001 | 00001 |

When the number is entered during execution, the kind of signal can be changed.

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.



| | |
|--------------------|--|
| 66-12 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the output operation of FAX G3 mode 300bps. (Used to check the operation of MODEM.) An output is send at the send level set by the soft switch. (Only when FAX is installed) |
| Section | FAX |
| Item | Operation |

Operation/Procedure

1) Select the number corresponding to the output mode with 10-key.

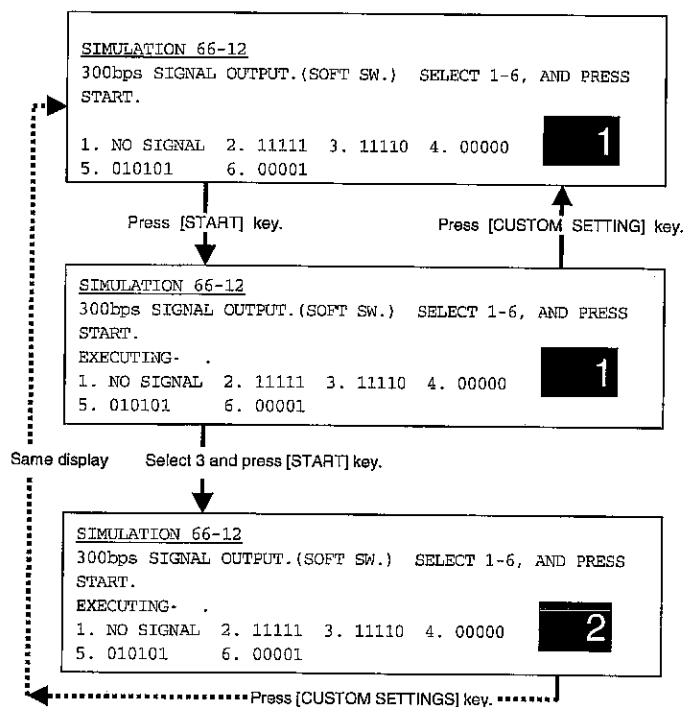
2) Press [START] key.

The signal is sent in the send level set with the soft switch.

| | | | | | |
|---|-----------|-----------|---|--------|--------|
| 1 | NO SIGNAL | No signal | 4 | 00000 | 00000 |
| 2 | 11111 | 11111 | 5 | 010101 | 010101 |
| 3 | 11110 | 11110 | 6 | 00001 | 00001 |

When the number is entered during execution, the kind of signal can be changed.

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.



66-13

| Purpose | Setting |
|---------------------------|--|
| Function (Purpose) | Used to enter (set) the number of FAX dial signal output test. (The dial number set by this simulation is outputted when the dial signal output test is made by SIM 66-14 - 16.) (Only when FAX is installed) |
| Section | FAX |
| Item | Data |

Operation/Procedure

- 1) Enter the dial number with 10-key.
Use 10-key, [*] key, and [#] key to enter the number. The upper limit is 20 digits.
When [CLEAR] key is pressed, the mode returns to the initial state.
- 2) Press [START] key.

SIMULATION 66-13
DIAL TEST NUMBER SETTING. 0-9: [0-9], *: [*], #: [#]
INPUT NUMBER AND PRESS START.
0123456789*#01234567

66-14

| Purpose | Setting/Operation test/Check |
|---------------------------|---|
| Function (Purpose) | Used to set the make time in the FAX pulse dial mode (10pps) and to test the dial signal output. (The dial number signal set by SIM 66-13 is outputted.) Used to check troubles in dialing and to check the operation. (Only when FAX is installed) |
| Section | FAX |
| Item | Operation |

Operation/Procedure

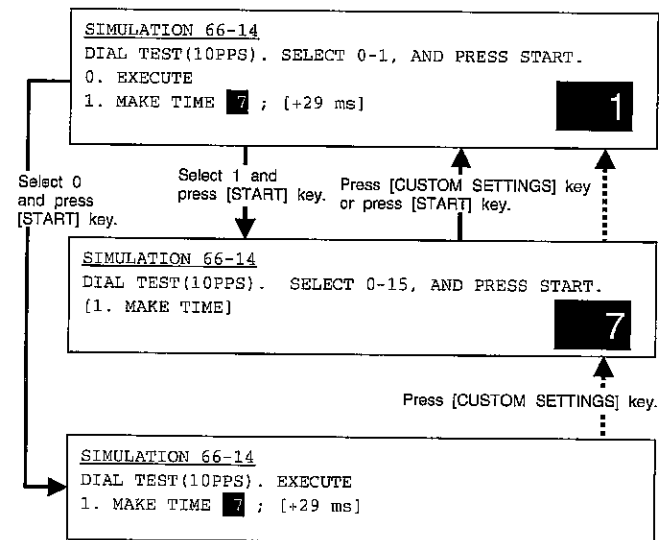
- 1) Enter 0 with 10-key.
- 2) Press [START] key.
The dial signal is outputted.
(Dial pulse make time setting)
- 1) Enter 1 with 10-key.
- 2) Press [START] key.

- 3) Enter the set value with 10-key.
- 4) Press [START] key.

| | | |
|---|-----------|---------------------------------------|
| 0 | EXECUTE | Execute |
| 1 | MAKE TIME | Dial pulse make time setting (0 - 15) |

The dial signal is sent with the set value + 29ms.

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.



66-15

| Purpose | Setting/Operation test/Check |
|---------------------------|---|
| Function (Purpose) | Used to set the make time in the FAX pulse dial mode (20pps) and to test the dial signal output. (The dial number signal set by SIM 66-13 is outputted.) Used to check troubles in dialing and to check the operation. (Only when FAX is installed) |
| Section | FAX |
| Item | Operation |

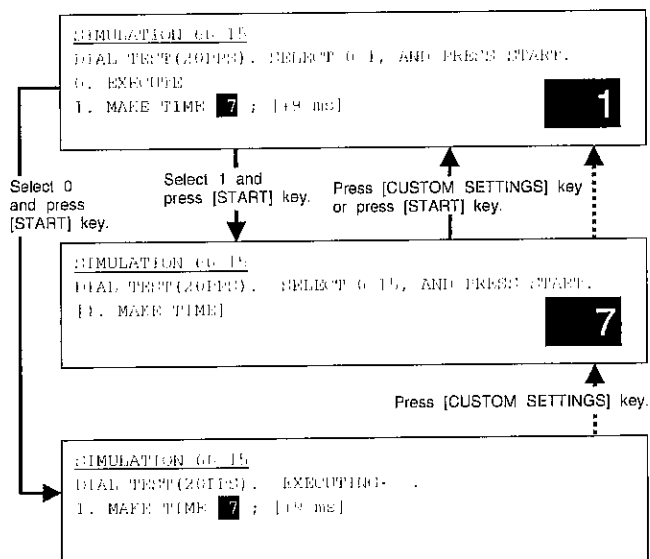
Operation/Procedure

- 1) Enter 0 with 10-key.
- 2) Press [START] key.
The dial signal is outputted.
(Dial pulse make time setting)
- 1) Enter 1 with 10-key.
- 2) Press [START] key.
- 3) Enter the set value with 10-key.
- 4) Press [START] key.

| | | |
|---|-----------|---------------------------------------|
| 0 | EXECUTE | Execute |
| 1 | MAKE TIME | Dial pulse make time setting (0 - 15) |

The dial signal is sent with the set value + 9ms.

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.



66-16

| | |
|---------------------------|---|
| Purpose | Setting/Operation test/Check |
| Function (Purpose) | Used to check the dial signal (DTMF) output in the FAX tone dial mode. (The dial number signal set by SIM 66-13 is outputted.) The send level can be set to an optional level. Used to check troubles in dialing and to check the operation. (Only when FAX is installed) |
| Section | FAX |
| Item | Operation |

Operation/Procedure

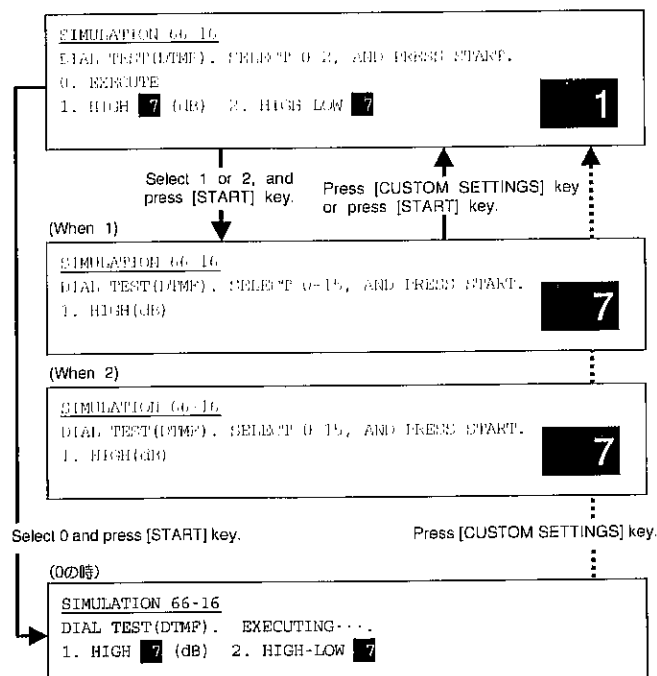
- 1) Enter 0 with 10-key.
 - 2) Press [START] key.
- The dial signal is outputted.

(Dial pulse make time setting)

- 1) Enter 1 or 2 with 10-key.
- 2) Press [START] key.
- 3) Enter the set value with 10-key.
- 4) Press [START] key.

| Item | | | Set range |
|------|----------|------------------------|-----------|
| 0 | EXECUTE | Execution | |
| 1 | HIGH | High group level | 0 - 15dB |
| 2 | HIGH LOW | High group - Low group | 0 - 15 |

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.



66-17

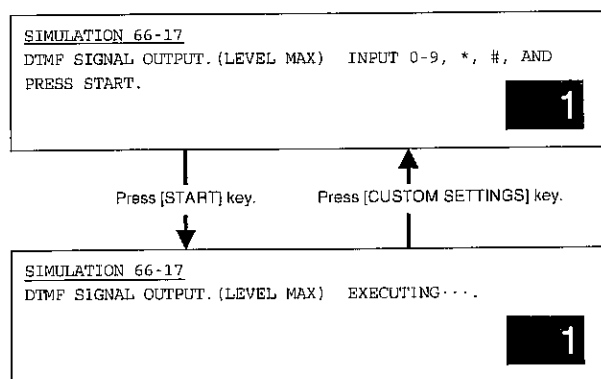
| | |
|---------------------------|---|
| Purpose | Setting |
| Function (Purpose) | Used to check the dial signal (DTMF) output in the FAX tone dial mode. Send level: Max. Used to check the operation. (Only when FAX is installed) |
| Section | FAX |
| Item | Operation |

Operation/Procedure

- 1) Enter the DTMF signal (1 - 9, 0, *, #) to be sent with 10-key.
- 2) Press [START] key.

The signal is sent in the max. send level.

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.



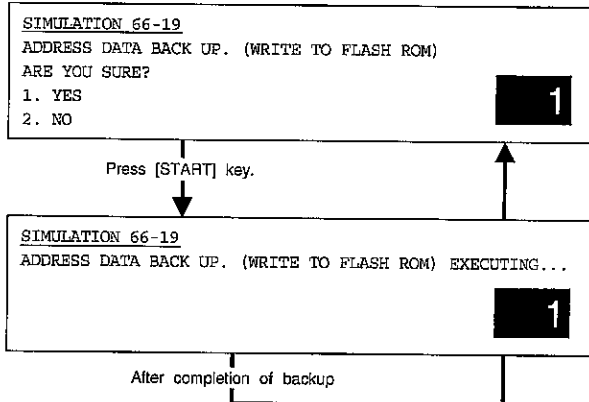
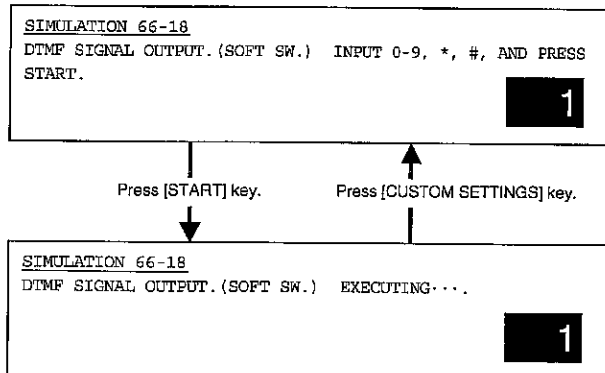
| | |
|---------------------------|--|
| 66-18 | |
| Purpose | Setting |
| Function (Purpose) | Used to check the dial signal (DTMF) output in the FAX tone dial mode. An output is sent at the send level set by the soft switch. Used to check the operation. (Only when FAX is installed) |
| Section | FAX |
| Item | Operation |

Operation/Procedure

- 1) Enter the DTMF signal (1 - 9, 0, *, #) to be sent with 10-key.
- 2) Press [START] key.

The signal is sent in the send level set with the soft SW.

When [CUSTOM SETTINGS] key is pressed during execution, the operation is stopped.



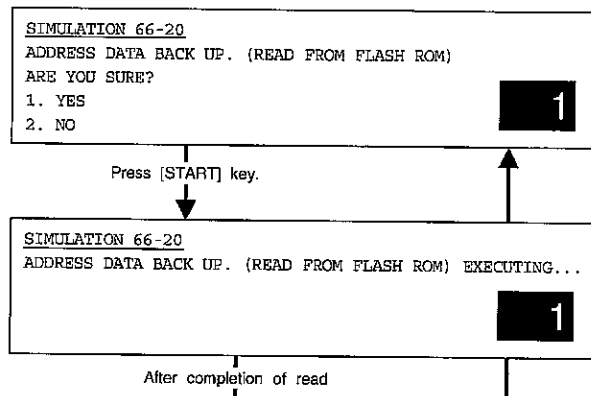
| | |
|---------------------------|--|
| 66-20 | |
| Purpose | Data transfer |
| Function (Purpose) | Used to read the back-up data by SIM 66-19 to the SRAM/HDD. (Only when FAX is installed) |
| Section | FAX |
| Item | Data |

Operation/Procedure

- 1) Select YES/NO of data transfer.

| | | |
|---|-----|-------------------------|
| 1 | YES | Backup is executed. |
| 2 | NO | Backup is not executed. |

- 2) Press [START] key.



| | |
|---------------------------|--|
| 66-19 | |
| Purpose | Data transfer |
| Function (Purpose) | Used to back-up the HDD data into the Flash memory (optional FAX expansion memory: AR-MM9). (Only when FAX is installed) |
| Section | FAX |
| Item | Data |

Operation/Procedure

- 1) Select YES/NO of data transfer (backup).

| | | |
|---|-----|-------------------------|
| 1 | YES | Backup is executed. |
| 2 | NO | Backup is not executed. |

- 2) Press [START] key.

This function is valid only when the AR-MM9 is installed.

Backup contents

- Address book data (FAX, Mail, Address)
- One-touch dial
- FTP expansion
- Group expansion
- Program
- Use index
- Standard sender
- IFAX sender registration
- FAX sender registration
- Item name
- Fine name
- FAX receive select table
- IFAX receive YES/NO
- Polling allow number
- Memory box
- Sender name
- Soft SW

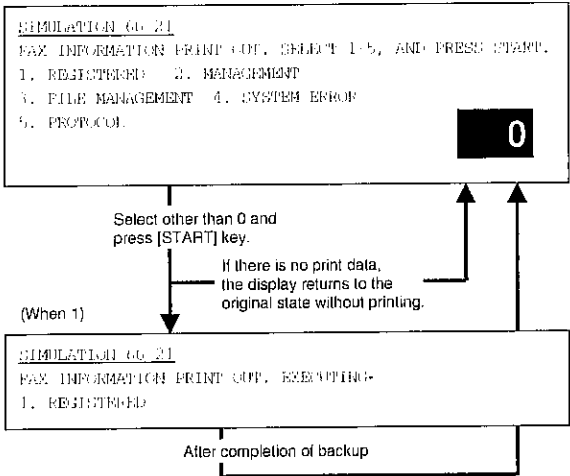
The other contents are not backed up.

| | |
|---------------------------|--|
| 66-21 | |
| Purpose | Adjustment/Setup/Operation data output/Check (Display/Print) |
| Function (Purpose) | Used to print information related to FAX (various registrations, communication management, file management, system error protocol). (Only when FAX is installed) |
| Section | FAX |
| Item | Data |

Operation/Procedure

- 1) Enter the number corresponding to the information (item) to be printed with 10-key.
- 2) Press [START] key.

| | | |
|---|-----------------|--------------------------------------|
| 1 | REGISTERED | Various registration information |
| 2 | MANAGEMENT | Communication management information |
| 3 | FILE MANAGEMENT | File management information |
| 4 | SYSTEM ERROR | System error information |
| 5 | PROTOCOL | Protocol information |



66-22

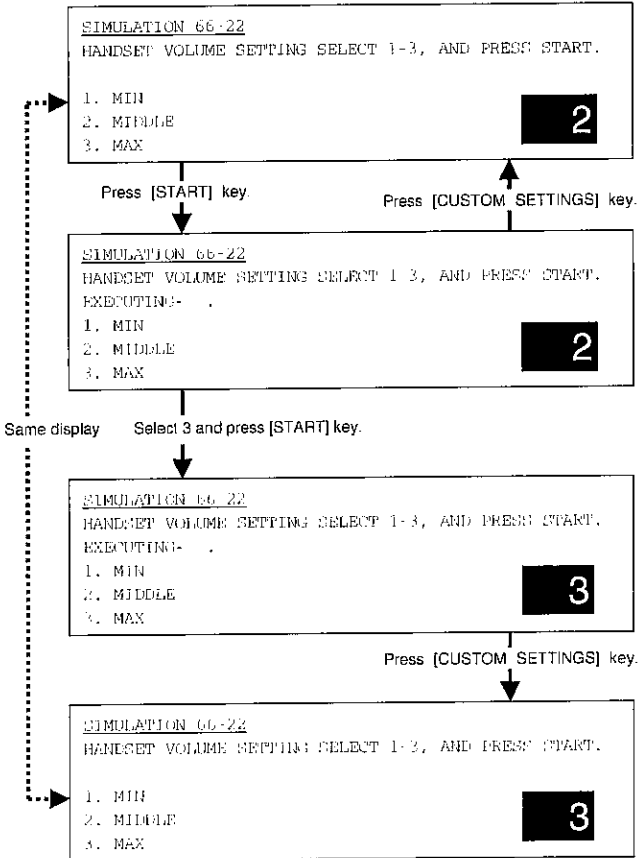
| Purpose | Setting |
|--------------------|--|
| Function (Purpose) | Used to adjust the handset volume. (Only when the FAX is installed.) |
| Section | FAX |
| Item | Operation |

Operation/Procedure

- 1) Enter the number corresponding to the volume with 10-key.
- 2) Press [START] key.

| | | |
|---|--------|--------|
| 1 | MIN | Small |
| 2 | MIDDLE | Medium |
| 3 | MAX | Large |

Selection of 1, 2, and 3 can be made during execution.



66-23

| Purpose | Setting |
|--------------------|---|
| Function (Purpose) | Used to download the FAX program. (Only when FAX is installed) Not used in the market. (For development) |
| Section | FAX |
| Item | |

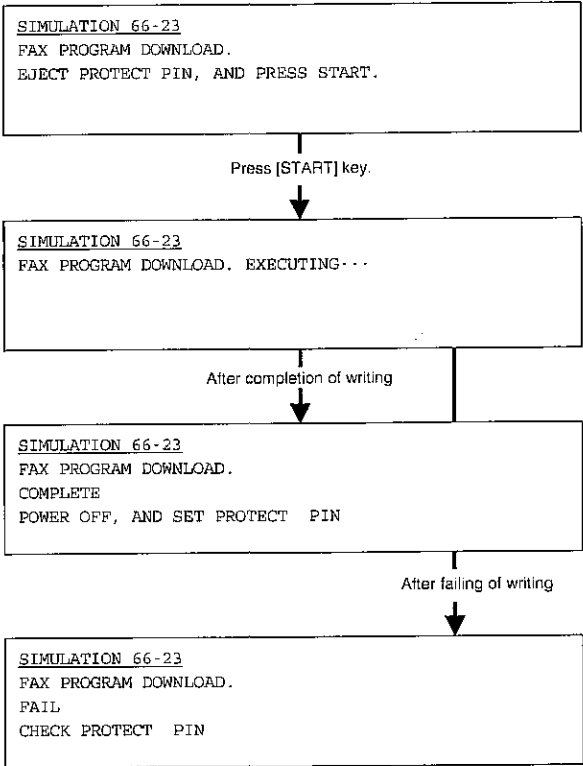
Operation/Procedure

- 1) Turn OFF the power.
- 2) Remove the protect pin.
- 3) Turn ON the power.
- 4) Enter the SIM 66-23 mode.
- 5) Press [START] key.

During operation, "EXECUTING" is displayed. When the operation is completed normally, "COMPLETE" is displayed.

If an error occurs, "FAIL" is displayed.

- 6) Turn OFF the power, and attach the protect pin.



66-24

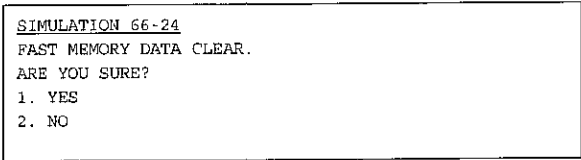
| Purpose | Clear |
|--------------------|--|
| Function (Purpose) | Used to clear the FAST memory data. (Only when FAX is installed) |
| Section | FAX |
| Item | Data |

Operation/Procedure

- 1) Select YES/NO of data clear.

| | | |
|---|-----|------------------------------|
| 1 | YES | FAST memory data is cleared. |
| 2 | NO | Not cleared. |

- 2) Press [START] key.



66-25

| | |
|---------------------------|--|
| Purpose | Setting |
| Function (Purpose) | Used to register the FAX number for Modem dial-in. (Only when FAX is installed) Not used in the market. (For development) |
| Section | FAX |
| Item | Data |

Operation/Procedure

- 1) Enter the Modem dial-in FAX number (1 - 9, 0, *, #) with 10-key.
- 2) Press [START] key.

SIMULATION 66-25

M-D-IN FAX NUMBER SETTING. 0-9:[0-9],*:[*],#:[#]
INPUT NUMBER AND PRESS START.
0123456789*#01234567

66-26

| | |
|---------------------------|--|
| Purpose | Setting |
| Function (Purpose) | Used to register external telephone numbers for Modem dial-in. (Only when FAX is installed) Not used in the market. (For development) |
| Section | FAX |
| Item | Data |

Operation/Procedure

- 1) Enter the Modem dial-in FAX number (1 - 9, 0, *, #) with 10-key.
- 2) Press [START] key.

SIMULATION 66-26

M-D-IN EXTEL NUMBER SETTING. 0-9:[0-9],*:[*],#:[#]
INPUT NUMBER AND PRESS START.
0123456789*#01234567

66-27

| | |
|---------------------------|--|
| Purpose | Setting |
| Function (Purpose) | Used to register the transfer number for voice warp. (Only when FAX is installed) Not used in the market. (For development) |
| Section | FAX |
| Item | Data |

Operation/Procedure

- 1) Enter the voice warp transfer number (1 - 9, 0, *, #) with 10-key.
- 2) Press [START] key.

SIMULATION 66-27

V-WP TRANSMIT NUMBER SETTING. 0-9:[0-9],*:[*],#:[#]
INPUT NUMBER AND PRESS START.
0123456789*#01234567

66-28

| | |
|---------------------------|--|
| Purpose | Setting |
| Function (Purpose) | Used to record voice messages. (Only when FAX is installed.) |
| Section | FAX |
| Item | Data |

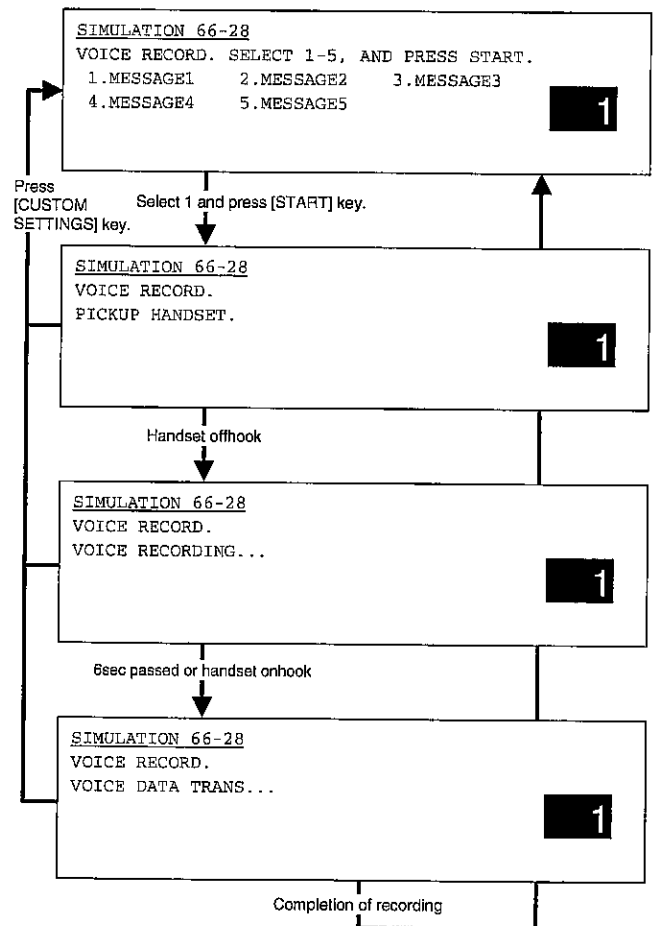
Operation/Procedure

- 1) Enter the number corresponding to the registration number with 10-key.
- 2) Use the handset to record a voice message. (Max. 6sec)
- 3) Onhook the handset. (End)

There are following five kinds of recording.

| | | |
|---|----------|-----------------|
| 1 | MESSAGE1 | Recording No. 1 |
| 2 | MESSAGE2 | Recording No. 2 |
| 3 | MESSAGE3 | Recording No. 3 |
| 4 | MESSAGE4 | Recording No. 4 |
| 5 | MESSAGE5 | Recording No. 5 |

When [CUSTOMSETTING] key is pressed, recording is interrupted.



| | |
|---------------------------|--|
| 66-29 | |
| Purpose | Clear |
| Function (Purpose) | Used to clear data related to an address book (one-touch registration, program registration/expansion, relay memory box registration, each table content). |
| Section | FAX, Network scanner |
| Item | Data |

Operation/Procedure

1) Select YES/NO of data clear.

| | | |
|---|-----|-------------------------------|
| 1 | YES | Address book data is cleared. |
| 2 | NO | Not cleared. |

2) Press [START] key.

| | |
|---------------------|---|
| SIMULATION 66-29 | |
| ADDRESS DATA CLEAR. | |
| ARE YOU SURE? | |
| 1. YES | 1 |
| 2. NO | |

| | |
|---------------------------|---|
| 66-30 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the change in the TEL/LIU status. |
| Section | FAX |
| Item | Operation |

Operation/Procedure

The TEL/LIU state is displayed.

When the state is changed, it is highlighted.

| | |
|------|----------------------------|
| HS1 | Polarity reverse signal |
| HS2 | Polarity reverse signal |
| RHS | Handset hook SW |
| EXHS | External telephone hook SW |

| | | | |
|-------------------------|-----|------------|----------|
| <u>SIMULATION 66-30</u> | | | |
| TEL/LIU SENSOR CHECK. | | | |
| HS1 | HS2 | RHS | EXHS |
| | | | 1 |

| | |
|---------------------------|------------------------------------|
| 66-31 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the relay operation. |
| Section | FAX |
| Item | Operation |

Operation/Procedure

1) Enter the number corresponding to the check item with 10-key.

2) Press [START] key.

| | | | |
|-----------------------------|---------|-------|-------|
| <u>SIMULATION 66-31</u> | | | |
| TEL/LIU SETTING. | | | |
| INPUT 0-1, AND PRESS START. | | | |
| 1. MPXA | 2. CION | 3. MR | 4. EC |
| 5. S. | 6. CML | 7. DP | 8. |
| 1 2 3 4 5 6 7 8 | | | |
| 10001100 | | | |

| | |
|---------------------------|--|
| 66-32 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the receive data (fixed data) from the line. |
| Section | FAX |
| Item | Operation |

Operation/Procedure

When check is completed normally, "OK" is displayed. In case of an error, "NG" is displayed.

(Display message)

| | |
|----------|-------------------------|
| CHECKING | Checking |
| OK | Checking completed (OK) |
| NG | Checking completed (NG) |

| | |
|---------------------------|--|
| SIMULATION 66-32 | |
| RECEIVED DATA CHECK. | |
| CHECKING . . . (OK or NG) | |

| | |
|---------------------------|---|
| 66-33 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the signal (BUSY TONE/CNG/CED/FNET/DTMF) detection. |
| Section | FAX |
| Item | Operation |

Operation/Procedure

The detected signal is highlighted.

| | | | | |
|----------------------|-----|-----|------|------|
| SIMULATION 66-33 | | | | |
| SIGNAL DETECT CHECK. | | | | |
| BUSY TONE | CNG | CED | FNET | DTMF |

| | |
|---------------------------|--|
| 66-34 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to measure the communication time of test image data. |
| Section | FAX |
| Item | Operation |

Operation/Procedure

Communication test is performed to measure the time (ms).

Send is made under the following conditions.

| | |
|---------------------|-------------|
| Communication means | Memory send |
| Image quality | Normal text |
| Density | Light |
| ECM | ON |
| Sender record | OFF |

| | |
|-----------------------------|--|
| SIMULATION 66-34 | |
| COMMUNICATION TIME DISPLAY. | |
| * * * * * ms | |

| | |
|---------------------------|---|
| 66-35 | |
| Purpose | Setting |
| Function (Purpose) | Modem program reloading (Only when FAX is installed) Not used in the market. (For development) |
| Section | FAX |
| Item | Data |

Operation/Procedure

1) Select YES/NO of Modem program reload.

| | | |
|---|-----|--------------------------------|
| 1 | YES | Modem block reload is cleared. |
| 2 | NO | Not reloaded. |

2) Press [START] key.

When reload is completed normally, "OK" is displayed. In case of an error, "CHECK SUM" is displayed.

The result of Modem reload is displayed.

| | |
|----------|------------------|
| COMPLETE | Reload completed |
| 81 | Check sum error |
| 82 | Write error |
| 83 | Delete error |
| 84 | Verify error |
| NG | Due to loader NG |

SIMULATION 66-35
MODEM PROGRAM RELOAD.
ARE YOU SURE?
1. YES
2. NO

Press [START] key.

SIMULATION 66-35
MODEM PROGRAM RELOAD. EXECITOMG...
LOADER... xxxxxx
MODEM... xxxxxx

After completion of reloading

SIMULATION 66-35
MODEM PROGRAM RELOAD.
LOADER. OK
MODEM. COMPLETE

| | |
|---------------------------|--|
| 66-36 | |
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check interface between MFPC controller and MDMC. (Check of the data line or the command line) |
| Section | FAX |
| Item | Operation |

Operation/Procedure

1) Enter the number corresponding to the check mode with 10-key.

| | | |
|---|-------------|------------------------|
| 1 | MFPC ← MDMC | Date line once only |
| 2 | MFPC → MDMC | Date line once only |
| 3 | MFPC ← MDMC | Data line repeat |
| 4 | MFPC → MDMC | Data line repeat |
| 5 | MFPC ← MDMC | Command line once only |
| 6 | MFPC → MDMC | Command line once only |
| 7 | MFPC ← MDMC | Command line repeat |
| 8 | MFPC → MDMC | Command line repeat |

2) Press [START] key.

When check is completed normally, "OK" is displayed. Incase of an error, "NG" is displayed.

When check is "repeat," the operation is continued until the result is NG or [CUSTOM SETTINGS] key is pressed.

SIMULATION 66-36
MFPC-MDMC I/F CHECK. INPUT 1-8, AND PRESS START.

- MFPC←-MDMC(DATA once)
- MFPC→-MDMC(DATA once)
- MFPC←-MDMC(DATA repeat)
- MFPC→-MDMC(DATA repeat)
- MFPC←-MDMC(CMD once)
- MFPC→-MDMC(CMD once)
- MDPC←-MDMC(CMD repeat)
- MFPC→-MDMC(CMD repeat)

Press [START] key.

SIMULATION 66-36
MFPC-MDMC I/F CHECK. INPUT 1-8, AND PRESS START.
EXECUTING...

When check is "once" or "repeat" and the result is "NG":

When check is "repeat" and [CUSTOM SETTINGS] key ON:

SIMULATION 66-36
MFPC-MDMC I/F CHECK. INPUT 1-8, AND PRESS START.
EXECUTING...(OK or NG)

| | |
|---------------------------|---|
| 66-39 | |
| Purpose | Setting |
| Function (Purpose) | Used to set the destination specifications. |
| Section | FAX |
| Item | Specifications |
| | Operation |

Operation/Procedure

- Enter the number corresponding to the destination.
- Press [START] key.

SIMULATION 66-39
FAX DESTINATION SETUP.
SELECT 1-6, AND PRESS START

- NO DESTINATION
- JAPAN
- U.S.A./CANADA
- EUROPE
- AUSTRALIA
- CHINA
- ASIA

Press [START] key.

| | |
|---------------------------|---------------------------|
| 66-60 | |
| Purpose | Setting |
| Function (Purpose) | Used to set the ACR data. |
| Section | FAX |
| Item | Operation |

Operation/Procedure

- Enter the number corresponding to the set item with 10-key.
The item list menu can be switched by pressing [P] key.
- Press [START] key.
- Enter the set value.
- Press [START] key.

This simulation can be executed when soft SW 24-4 and 24-5 are set to 1. Display/Not display is switched by soft SW 24-4 and 24-5.

The digit limitation and characters allowed to be inputted depend on the input item.

SIMULATION 66-60
ACR SETTING. SELECT NUMBER, AND PRESS START.
SWITCHING OF MENU: [#]

| | |
|----------------------------|---------------------------------|
| 1. Local Carrier Number | 2. Long Distance Carrier Number |
| 3. Overseas Carrier Number | 4. Expense Number |
| 5. User Area Code | 6. Machine Code |
| 7. Version | 8. Through Number 1 |
| 9. Through Number 2 | 10. Through Number 3 |
| 11. Through Number 4 | 12. Through Number 5 |
| 13. Through Number 6 | 14. Through Number 7 |
| 15. Through Number 8 | 15. Through Number 9 |
| 17. Through Number 10 | 18. Through Number 11 |

1

SIMULATION 66-60
ACR SETTING. SELECT NUMBER, AND PRESS START.
SWITCHING OF MENU: [#]

| | |
|------------------------------|------------------------------|
| 19. Through Number 12 | 20. Through Number 13 |
| 21. Through Number 14 | 22. Through Number 15 |
| 23. Through Number 16 | 24. Through Number 17 |
| 25. Through Number 18 | 26. Through Number 19 |
| 27. Through Number 20 | 28. Through Number 21 |
| 29. Through Number 22 | 30. Reserve Through Number 1 |
| 31. Reserve Through Number 2 | 32. Reserve Through Number 3 |
| 33. Reserve Through Number 4 | 34. Reserve Through Number 5 |
| 35. Reserve Through Number 6 | 36. Reserve Through Number 7 |

1

SIMULATION 66-60
ACR SETTING. SELECT NUMBER, AND PRESS START.
SWITCHING OF MENU: [#]

37. Reserve Through Number 8

1

SIMULATION 66-60
ACR SETTING.
Local Carrier Number: 0-9: [0-9],
9999

1

SIMULATION 67-2
CENTRO PORT CHECK.
CENTRO PORT: **READY**

With READY displayed, press [START] key.

Press [CUSTOM SETTINGS] key.

SIMULATION 67-2
CENTRO PORT CHECK.
CENTRO PORT: **OK** (or **STAGE7 NG**)

| 67-11 | |
|--------------------|--|
| Purpose | Setting |
| Function (Purpose) | Used to set YES/NO of the parallel I/F select signal of the printer. |
| Section | MFP controller |
| Item | OperationInterface/Communication |

| Operation/Procedure | |
|---|----------------------------------|
| 1) Enter the number corresponding to the select IN signal YES/NO setting with 10-key. | |
| | |
| Item | Default |
| 0 OFF | 0 (AR-M550U, AR-M620U, AR-M700U) |
| 1 ON | 1 (AR-M550N, AR-M620N, AR-M700N) |

2) Press [START] key.

When the printer parallel I/F is used and a trouble is generated in the communication between the PC and the printer, change the setting of this simulation.

SIMULATION 67-11
CENTRO SELECT IN SIGNAL SETTING. SELECT 0-1, AND PRESS START.

0. OFF
1. ON

| 67-16 | |
|--------------------|--|
| Purpose | Operation test/Check |
| Function (Purpose) | Used to check the operation of the network card. |
| Section | MFP controller |
| Item | OperationInterface/Communication |

Operation/Procedure

During check, "CHECKING" is displayed. When check is completed normally, "OK" is displayed. In case of an error, "NG" is displayed.

| (Display message) | |
|-------------------|--------------------|
| CHECKING | Checking |
| OK | Check end (Normal) |
| NG | Check end (Error) |

SIMULATION 67-16
NETWORK INTERFACE CARD CHECK.
NIC: CHECKING

Check end

Press [CUSTOM SETTINGS] key.

SIMULATION 67-16
NETWORK INTERFACE CARD CHECK.
NIC: OK (or NG)

67

67-2

| Purpose | Operation test/Check |
|--------------------|--|
| Function (Purpose) | Used to check the operation of the parallel I/F of the printer. (This simulation is for production only, and requires a special tool for execution. Not used in the market.) |
| Section | MFP controller |
| Item | OperationInterface/Communication |

Operation/Procedure

| (Display message) | |
|-------------------|---|
| WAITING | Waiting |
| READY | Check start OK |
| OK | Check end (Normal) |
| STAGE*NG | Check end (Error in stage *, *: 1 - 11) |

[9] SELF DIAG MESSAGE AND TROUBLESHOOTING

[Error code]

1. General

When a trouble occurs in the machine or when the life of a consumable part is nearly expired or when the life is expired, the machine detects and displays it on the display section. This allows the user and the serviceman to take the suitable action. In case of a trouble, this feature notifies the occurrence of a trouble and stops the machine to minimize the damage.

2. Function and purpose

- 1) Securing safety. (The machine is stopped on detection of a trouble.)
- 2) The damage to the machine is minimized. (The machine is stopped on detection of a trouble.)
- 3) By displaying the trouble content, the trouble position can be quickly identified. (This allows to perform an accurate repair, improving the repair efficiency.)
- 4) Preliminary warning of running out of consumable parts allows to arrange for new parts in advance of running out. (This avoids stopping of the machine due to running out the a consumable part.)

3. Self diag message kinds

The self diag messages are classified as shown in the table below.

| | | |
|---------|-------------|--|
| Class 1 | User | Warning of troubles which can be recovered by the user. (Paper jam, consumable part life expiration, etc.) |
| | Service man | Warning of troubles which can be recovered only by a serviceman. (Motor trouble, maintenance, etc.) |
| | Other | — |
| Class 2 | Warning | Warning to the user, not a machine trouble (Preliminary warning of life expiration of a consumable part, etc.) |
| | Trouble | Warning of a machine trouble. The machine is stopped. |
| | Other | — |

4. Self diag operation

A. Self diag operation and related work flow

The machine always monitors its own state.

When the machine recognizes a trouble, it stops the operation and displays the trouble message.

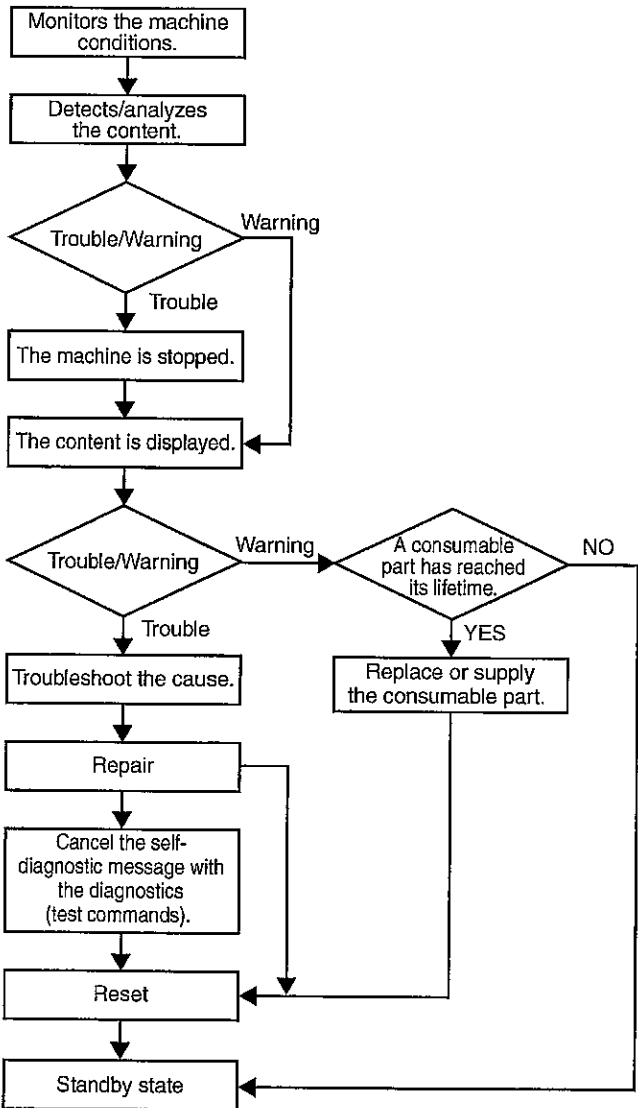
A warning message is displayed when a consumable part life is nearly expired or is expired.

When a warning message is displayed, the machine may be or may not be stopped.

The trouble messages and the warning messages are displayed by the LCD.

Some trouble messages are automatically cleared when the trouble is repaired. Some other troubles must be cleared by a simulation.

Some warning messages of consumable parts are automatically cleared when the trouble is repaired. Some other warning messages must be cleared by a simulation.



5. Breakdown sequence

A. Breakdown mode process

(1) Breakdown mode list

There are following cases of the breakdown mode.

| (The machine can be operated under some conditions.) | Judgment block | Trouble code | Operation enable mode | | | | | | |
|--|------------------|---|---------------------------------|----------|---------------|-----------|-------|------------|--------------------------|
| | | | Copy read (including interrupt) | FAX send | Email receive | FAX print | Print | List print | Notification to FASThost |
| (SPF breakdown) | Scanner | U5 | Δ1 | Δ1 | Δ1 | ○ | ○ | ○ | ○ |
| Scanner section breakdowns (Mirror motor, lens, copy lamp) | Scanner | L1, L3, U2 (80, 81) | × | × | × | ○ | ○ | ○ | ○ |
| FAX board breakdown | MFP control/ FAX | F6, F7 | ○ | × | ○ | × | ○ | ○ | × |
| FAX power OFF | MFP control | | ○ | × | ○ | × | ○ | ○ | × |
| Network error | MFP control | CE | ○ | ○ | × | ○ | ○ | ○ | × |
| Staple breakdown | PCU | F1 (10) | Δ2 | ○ | ○ | Δ2 | Δ2 | Δ2 | ○ |
| Paper feed tray breakdown | PCU | F3, U6 (LCC) | Δ3 | ○ | ○ | Δ3 | Δ3 | Δ3 | ○ |
| (Process control breakdown) | PCU | F2 (31, 32, 37) | Δ4 | ○ | ○ | Δ4 | Δ4 | Δ4 | ○ |
| PCU section breakdowns (Motor, fusing section, etc.) | PCU | C1, C2, C3, H2, H3, H4, H5, L4 (excluding L4-30), L8, U2 (90, 91), F2, F4 | × | ○ | ○ | × | × | × | ○ |
| After-process breakdown | PCU | F1 | Δ5 | ○ | ○ | Δ5 | Δ5 | Δ5 | ○ |
| Inserter trouble (excluding communication trouble) | PCU | F1 (61, 62) | Δ7 | ○ | ○ | Δ7 | Δ7 | Δ7 | ○ |
| Laser breakdown | PCU | E7 (02 only), L6 | × | ○ | ○ | × | × | × | ○ |
| HDD breakdown | MFP control | E7 (03) | × | × | × | × | × | × | ○ |
| CCD breakdowns (Shading, etc.) | Scanner | E7 (10, 11, 12, 14) | × | × | × | ○ | ○ | ○ | ○ |
| CIS breakdowns (Shading, etc.) | Scanner | E6 (10, 11, 14) | Δ6 | Δ6 | Δ6 | ○ | ○ | ○ | ○ |
| Scanner communication trouble | MFP control | E7 (80) | × | × | × | ○ | ○ | ○ | ○ |
| PCU communication trouble | MFP control | E7 (90) | × | × | × | × | × | × | ○ |
| FAX backup battery voltage fall | MFP control | U1 (01, 02) | ○ | × | × | ○ | ○ | ○ | ○ |
| HDD registration data sum error | MFP control | U2 (50) | ○ | × | × | ○ | ○ | ○ | ○ |
| Thermistor trouble (trouble history) | PCU | F2 (39, 46, 47, 48) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

(The machine cannot be operated.)

| | | | | | | | | | |
|---------------------------------------|------------------|-------------------------------------|---|---|---|---|---|---|---|
| Memory | MFP control | U2 (00, 11, 12, 22, 23) | × | × | × | × | × | × | ○ |
| External communication disable (RICA) | MFP control | U7, PF | × | × | × | × | × | × | ○ |
| Image memory trouble, decode error | MFP control | E7 (01, 06) | × | × | × | × | × | × | ○ |
| Incompatibility check error | MFP control/ PCU | E7 (50, 55, 56, 57, 60, 65, 66, 67) | × | × | × | × | × | × | × |
| Controller fan motor trouble | MFP control | L4-30 | × | × | × | × | × | × | × |

* For FAX communication, refer to the sheet of "Call request and Call-in."

* The machine may be operated under some conditions.

Δ1: When detected except when in a job, the machine can be operated in the OC mode.

Δ2: Can be operated except in the staple mode.

Δ3: When detected except in a job, the machine can be operated except with the breakdown tray.

Δ4: Can be operated with some restriction on the image quality depending on the destination. (Low density print) * Refer to the process control trouble operation table below.

Δ5: When detected except in a job, can be operated except in the trouble paper exit section.

Δ6: When detected except in a job, can be operated in the single surface scan mode.

Δ7: Can be operated except in the inserter tray, if the error is detected in the standby mode.

* Process control trouble operation table

| Trouble code | Error content | Japan/SEC | Europe/ Others |
|--------------|--|------------------|------------------|
| F2-31 | Process control sensor gain adjustment failure | Machine stop | Low density copy |
| F2-32 | Mark detection failure | Low density copy | Low density copy |
| F2-37 | Mark sensor gain adjustment failure | Machine stop | Low density copy |

(2) Trouble mode process

The machine can be operated under some conditions.

Operations except for the trouble mode are enabled (READY). For the modes which cannot be operated, only setting is enabled and a message is given to show the operations are disabled. (NOT READY in this case)

(Display)

When a trouble occurs, a dialog is shown. In the mode where the operation is enabled, the OK button is added to the message. In the mode where the operation is disabled, the OK button is not shown and the display is kept until the trouble is canceled.

(3) Writing to the trouble memory

In case of a same trouble in this machine, selection is made with the simulation to write into the trouble memory or not. If this simulation is set, any trouble is written into the trouble memory unconditionally.

(SIMULATION. 26-35)

0: A same trouble as the previous one is not written. (Default)

1: Any trouble is written into the trouble memory unconditionally.

B. Power ON trouble detection sequence.

- When the power is turned ON, if H3, H4, H5, U1, U2, PF, L4-31, F3-12/22, or U6 (LCC-related sub code 09 only) is saved, a trouble code is immediately displayed. E7 (50, 55, 56, 57, 60, 65, 66, 67) trouble is not saved.

(Power ON sequence)

- H3, H4, U1, U2, U6 PF trouble check

Trouble check is made in each block when initializing and data are sent to the ICU.

H3, H4, H5, L4-31, F3-12/22: Saved in the PCU.

U1: Saved in the ICU.


U2: Saved in each block.

PF: Saved in the ICU.

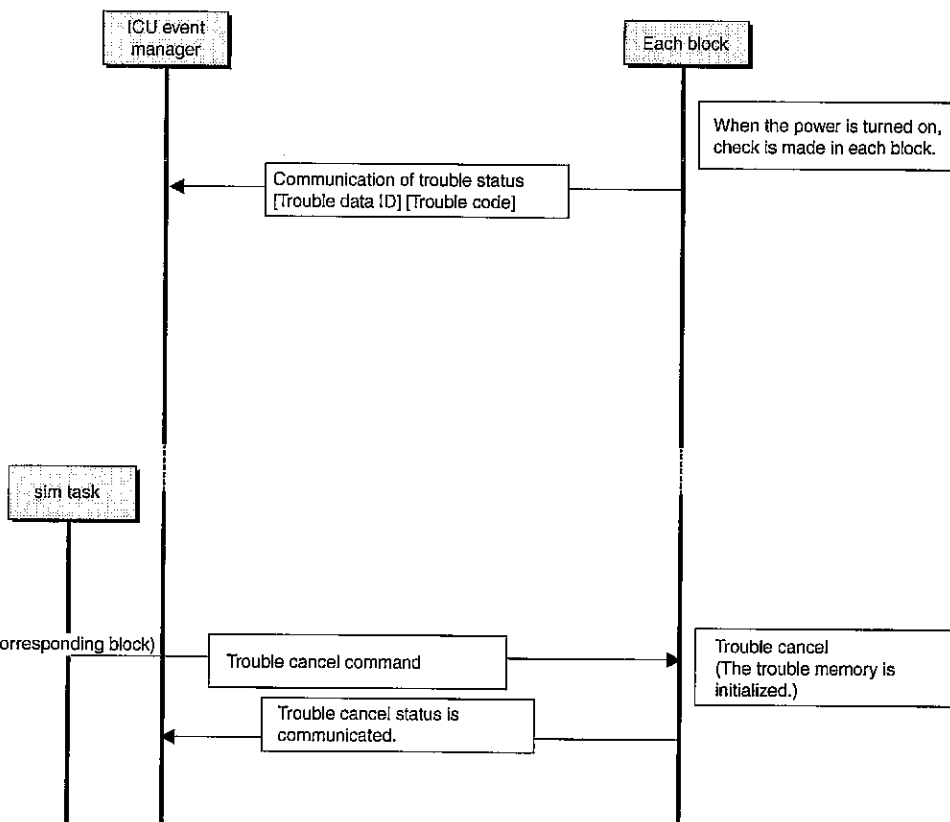
U6-09: Saved in the PCU.

(Trouble cancel sequence)

- When executing SIM 13, 14, 15, 16, 17

SIM 13: U1 trouble cancel
SIM 14: H3, H4, H5, L4-31 trouble cancel
SIM 15: LCC (U6), Tray 1, 2 (F3-12, 22) 
F3-12/22 trouble cancel
SIM 16: U2 trouble cancel
SIM 17: PF trouble cancel

(To the corresponding block)



6. Communication in trouble

A. FAX call request/call-in specifications

| Trouble | Send reservation | Print | Call request | Call-in | Precaution |
|---|------------------|-------|--------------|---------|--|
| PCU breakdowns (Incompatibility check error: E7 (50, 56, 57, 65, 66, 67)) | ○ | × | ○ | Note | There is a risk that the memory is full. |
| F3, U6 (Paper feed tray breakdown) | ○ | Δ2 | ○ | ○ | |
| F1 (Paper exit section breakdown) | ○ | Δ4 | ○ | ○ | |
| Scanner breakdowns | × | ○ | ○ | ○ | |
| F6, F7 (FAX breakdown) | × | × | × | × | |
| E7 (01, 06) (MFP control breakdown) | × | × | × | × | |
| U2 (00, 11, 12, 22, 23, 50) (MFP control memory error) | × | × | × | × | |
| U7 (RIC external communication disable), PF | × | × | × | × | Inhibition of use by a customer having outstanding fee |
| U1 (Backup battery voltage fall) | × | Δ3 | × | × | Transfer enable |
| E7 (50, 55, 56, 57, 60, 65, 66, 67) (Incompatibility check error) | × | × | × | × | |
| L4-30 (Controller fan motor trouble) | × | × | × | × | |
| Door open | ○ | × | ○ | ○Note | There is a risk that the memory is full. |
| Toner empty | ○ | × | ○ | ○Note | There is a risk that the memory is full. |
| Process cartridge uninstalled, etc. | ○ | × | ○ | ○Note | There is a risk that the memory is full. |
| Paper empty | ○ | × | ○ | ○Note | There is a risk that the memory is full. |
| Paper JAM | ○ | × | ○ | ○Note | There is a risk that the memory is full. |
| Document JAM | × | ○ | ○ | ○ | |
| Simulation | × | × | × | × | |
| Key operation (Communication disable) | × | × | × | × | |

Δ2: Enable except for the trouble tray

* When, however, a paper feed tray trouble is detected during a job, the engine is stopped and printing is disabled.

Δ3: The display goes to the FAX status check menu and the list can be printed.: The received document is outputted.

Δ4: Paper exit is enabled except for the trouble paper exit tray

* When, however, a paper feed tray trouble is detected during a job, the engine is stopped and printing is disabled.

7. Trouble kind

| Trouble code | | Trouble content | Remarks | Trouble detection | Mechanism | Option | Electricity | FAX | Supply |
|--------------|----------|--|---------|-------------------|-----------|--------|-------------|-----|--------|
| Main code | Sub code | | | | | | | | |
| C1 | 00 | MC trouble | | PCU | | | ● | | |
| CE | 00 | Another communication error occurs. | | Network | | | | | |
| CE | 01 | The network card is not installed or broken. | | Network | | | | | |
| CE | 02 | The specified mail server or the FTP server is not found. | | Network | | | | | |
| CE | 03 | The specified server suspends response during transmission of images. | | Network | | | | | |
| CE | 04 | The entered account name of the FTP server or the password for authentication is invalid. | | Network | | | | | |
| CE | 05 | The entered directory of the FTP server is invalid. | | Network | | | | | |
| CE | 06 | The specified mail server (POP3) is not found. | | Network | | | | | |
| CE | 07 | The entered account name of the POP3 server or the password for authentication is invalid. | | Network | | | | | |
| CE | 08 | The specified mail server (POP3) suspends response. | | Network | | | | | |
| CH | — | Door open (CH ON) | | PCU | | | | | |
| E6 | 11 | CIS shading trouble (White correction) | | Scanner | | | ● | | |
| E6 | 14 | CIS-ASIC communication trouble | | Scanner | | | ● | | |
| E7 | 01 | System data trouble | | MFP control | — | — | — | — | — |
| E7 | 02 | Laser trouble | | PCU | | | ● | | |
| E7 | 03 | HDD trouble | | MFP control | | | ● | | |
| E7 | 06 | Decode error trouble | | MFP control | | | ● | | |
| E7 | 10 | CCD shading trouble (Black correction) | | Scanner | | | ● | | |
| E7 | 11 | CCD shading trouble (White correction) | | Scanner | | | ● | | |
| E7 | 12 | CCD shading trouble (White correction center adjustment) | | Scanner | | | ● | | |
| E7 | 14 | CCD-ASIC communication trouble | | Scanner | | | ● | | |
| E7 | 50 | LSU connection trouble | | PCU | | | ● | | |
| E7 | 55 | Incompatibility check (Engine (PCU) detection) | | PCU | | | ● | | |

| Trouble code | | Trouble content | Remarks | Trouble detection | Mechanism | Option | Electricity | FAX | Supply |
|--------------|----------|--|-----------------|-------------------|-----------|--------|-------------|-----|--------|
| Main code | Sub code | | | | | | | | |
| E7 | 56 | Incompatibility check (Engine (PCU) detection) | | PCU | | | ● | | |
| E7 | 57 | Incompatibility check (Engine (PCU) detection) | | PCU | | | ● | | |
| E7 | 60 | Controller connection trouble | | MFP control | | | ● | | |
| E7 | 65 | Incompatibility check (MFP controller detection) | | MFP control | | | ● | | |
| E7 | 66 | Incompatibility check (MFP controller detection) | | MFP control | | | ● | | |
| E7 | 67 | Incompatibility check (MFP controller detection) | | MFP control | | | ● | | |
| E7 | 80 | Scanner PWB communication trouble | | MFP control | | | ● | | |
| E7 | 90 | PCU PWB communication trouble | | MFP control | | | ● | | |
| EE | EL | Auto developer adjustment trouble (Overtoner error) | During SIM only | PCU | | | | | ● |
| EE | EU | Auto developer adjustment trouble (Undertoner error) | During SIM only | PCU | | | | | ● |
| F1 | 00 | Finisher communication trouble | | PCU | | ● | | | |
| F1 | 02 | Finisher transport motor abnormality | | PCU | | ● | | | |
| F1 | 03 | Finisher oscillation motor trouble | | PCU | | ● | | | |
| F1 | 08 | Finisher staple shift motor trouble | | PCU | | ● | | | |
| F1 | 09 | Finisher load capacity sensor trouble | | PCU | | ● | | | |
| F1 | 10 | Finisher/staple motor trouble | | PCU | | ● | | | |
| F1 | 11 | Finisher/pusher motor trouble | | PCU | | ● | | | |
| F1 | 15 | Finisher elevator motor trouble | | PCU | | ● | | | |
| F1 | 19 | Finisher/jogger motor trouble | | PCU | | ● | | | |
| F1 | 31 | Finisher saddle folding motor trouble | | PCU | | ● | | | |
| F1 | 32 | Finisher-saddle communication trouble | | PCU | | ● | | | |
| F1 | 33 | Finisher/punch shift motor trouble | | PCU | | ● | | | |
| F1 | 34 | Finisher/punch motor trouble | | PCU | | ● | | | |
| F1 | 37 | Finisher/backup RAM data trouble | | PCU | | ● | | | |
| F1 | 38 | Finisher/punch backup RAM data trouble | | PCU | | ● | | | |
| F1 | 41 | Finisher/saddle positioning plate motor trouble | | PCU | | ● | | | |
| F1 | 42 | Finisher/saddle guide motor trouble | | PCU | | ● | | | |
| F1 | 43 | Finisher/saddle alignment motor trouble | | PCU | | ● | | | |
| F1 | 44 | Finisher/saddle rear staple motor trouble | | PCU | | ● | | | |
| F1 | 45 | Finisher/saddle front staple motor trouble | | PCU | | ● | | | |
| F1 | 46 | Finisher/saddle push motor trouble | | PCU | | ● | | | |
| F1 | 51 | Finisher/sensor connector connection trouble | | PCU | | ● | | | |
| F1 | 52 | Finisher/micro switch trouble | | PCU | | ● | | | |
| F1 | 60 | Finisher-inserter communication trouble | | PCU | | ● | | | |
| F1 | 61 | Inserter/EEPROM trouble | | PCU | | ● | | | |
| F1 | 62 | Inserter/reverse sensor trouble | | PCU | | ● | | | |
| F2 | 00 | Toner concentration sensor open | | PCU | | | | | ● |
| F2 | 02 | Toner supply abnormality | | PCU | | | | | ● |
| F2 | 04 | Improper cartridge (Destination error, life cycle error) | | PCU | | | | | ● |
| F2 | 05 | CRUM error | | PCU | | | | | ● |
| F2 | 31 | Process control trouble (Photoconductor surface reflection rate abnormality) | | PCU | | | | | ● |
| F2 | 32 | Process control trouble (Drum marking scan failure) | | PCU | | | | | ● |
| F2 | 37 | Drum marking sensor gain adjustment error | | PCU | | | | | ● |
| F2 | 39 | Process thermistor breakdown | | PCU | | | | | ● |
| F2 | 46 | Developing thermistor breakdown | | PCU | | | | | ● |
| F2 | 48 | Developing humidity sensor break down | | PCU | | | | | ● |
| F3 | 12 | Tray 1 lift-up trouble | | PCU | ● | | | | |
| F3 | 22 | Tray 2 lift-up trouble | | PCU | ● | | | | |
| F3 | 32 | Tray 3 lift-up trouble | | PCU | ● | | | | |
| F3 | 42 | Tray 4 lift-up trouble | | PCU | ● | | | | |
| F4 | 38 | 38 (V) voltage trouble | | PCU | | | ● | | |
| F6 | 00 | FAX board communication trouble | | MFP control | | | | ● | |
| F6 | 01 | FAX expansion flash ROM abnormality | | MFP control | | | | ● | |
| F6 | 04 | FAX modem operation abnormality | | FAX | | | | ● | |
| F6 | 20 | FAX write protect cancel | | FAX | | | | ● | |
| F6 | 21 | Combination error of TEL/LIU PWB and software | | FAX | | | | ● | |

| Trouble code | | Trouble content | Remarks | Trouble detection | Mechanism | Option | Electricity | FAX | Supply |
|--------------|----------|--|---------|-------------------|-----------|--------|-------------|-----|--------|
| Main code | Sub code | | | | | | | | |
| F6 | 97 | FAX-BOX incompatibility trouble | | FAX | | | | ● | |
| F6 | 98 | Combination error of the FAX-BOX destination information and the machine destination information | | FAX | | | | ● | |
| F7 | 01 | FAX board EEPROM read/write error | | FAX | | | | ● | |
| F9 | 02 | PRT centro port check error | | MFP control | | | ● | | |
| H2 | 00 | Thermistor open (HL1) | | PCU | ● | | | | |
| H2 | 01 | Thermistor open (HL2) | | PCU | ● | | | | |
| H2 | 02 | Thermistor open (HL3) | | PCU | ● | | | | |
| H3 | 00 | Heat roller high temperature detection (HL1) | | PCU | ● | | | | |
| H3 | 01 | Heat roller high temperature detection (HL2) | | PCU | ● | | | | |
| H3 | 02 | Heat roller high temperature detection (HL3) | | PCU | ● | | | | |
| H4 | 00 | Heat roller low temperature detection (HL1) | | PCU | ● | | | | |
| H4 | 01 | Heat roller low temperature detection (HL2) | | PCU | ● | | | | |
| H4 | 02 | Heat roller low temperature detection (HL3) | | PCU | ● | | | | |
| H5 | 01 | 5-time continuous POD not-reached JAM detection | | PCU | ● | | | | |
| L1 | 00 | Scanner feed trouble | | Scanner | ● | | | | |
| L3 | 00 | Scanner return trouble | | Scanner | ● | | | | |
| L4 | 01 | Main motor lock detection | | PCU | | | ● | | |
| L4 | 02 | Drum motor lock detection | | PCU | | | ● | | |
| L4 | 03 | Fusing motor lock detection | | PCU | | | ● | | |
| L4 | 04 | Developing motor lock detection | | PCU | | | ● | | |
| L4 | 06 | Transfer belt separation motor trouble | | PCU | | | ● | | |
| L4 | 30 | Controller fan motor trouble | | MFP control | | | ● | | |
| L4 | 31 | Paper discharging fan trouble | | MFP control | | | ● | | |
| L6 | 10 | Polygon motor lock detection | | PCU | | | ● | | |
| L8 | 01 | No full wave signal | | PCU | | | ● | | |
| PC | -- | Personal counter uninstalled | | MFP control | | | | | |
| PF | 00 | RIC copy inhibit command receive | | MFP control | | | ● | | |
| U1 | 01 | FAX battery abnormality | | MFP control | | | | ● | |
| U1 | 02 | RTC read error (combined use as FAX, on MFP control PWB) | | MFP control | | | | ● | |
| U2 | 00 | EEPROM read/write error (MFP control) | | MFP control | | | ● | | |
| U2 | 11 | Counter check sum error (MFP control EEPROM) | | MFP control | | | ● | | |
| U2 | 12 | Adjustment value check sum error (MFP control EEPROM) | | MFP control | | | ● | | |
| U2 | 22 | MFPC section SRAM memory check sum error | | MFP control | | | | ● | |
| U2 | 23 | MFPC section SRAM memory individual data check sum error | | MFP control | | | | ● | |
| U2 | 50 | HDD section individual data check sum error | | MFP control | | | | ● | |
| U2 | 80 | Scanner section EEPROM read/write error | | Scanner | | | ● | | |
| U2 | 81 | Scanner section memory sum check error | | Scanner | | | ● | | |
| U2 | 90 | PCU section EEPROM read/write error | | PCU | | | ● | | |
| U2 | 91 | PCU section memory sum check error | | PCU | | | ● | | |
| U5 | 30 | SPF tray lift-up trouble | | Scanner | ● | | | | |
| U5 | 31 | SPF tray lift-down trouble | | Scanner | ● | | | | |
| U6 | 09 | LCC lift motor trouble | | PCU | | ● | | | |
| U6 | 20 | LCC communication trouble | | PCU | | ● | | | |
| U6 | 21 | LCC transport motor trouble | | PCU | | ● | | | |
| U6 | 22 | LCC 24V power abnormality addition | | PCU | | ● | | | |
| U7 | 00 | PC/Modem communication trouble | | MFP control | | | ● | | |
| -- | -- | Auditor NOT READY | | MFP control | | | | | |

8. Details

| Main code | Sub code | Title | MC trouble | |
|-----------|----------|------------|----------------------------|--|
| C1 | 00 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | MC trouble Three successive MHV-T signals are detected during operation of MHV. Main charger output abnormality (Output open) A trouble signal is outputted from the high voltage transformer. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | The main charger is not installed properly. The main charger is not assembled properly. |
| | | | Remedy | Use SIM 8-2 to check the main charger output. Main charger disconnection check |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | The high voltage transformer connector is disconnected. The high voltage harness is disconnected or broken. |
| | | | Remedy | Connection check |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | High voltage unit trouble |
| | | | Remedy | Replace the high voltage unit. |
| | | | Note | |

| Main code | Sub code | Title | Another communication error occurs. | |
|-----------|----------|------------|-------------------------------------|--|
| CE | 00 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Communication error |
| | | | Section | |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Improper connection of the network cable |
| | | | Remedy | Check the connection of the network cable. |
| | | | Note | |

| Main code | Sub code | Title | The network card is not installed or broken. | |
|-----------|----------|------------|--|---|
| CE | 01 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Network card connection trouble |
| | | | Section | |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | The network card is not installed on the controller. |
| | | | Remedy | Check that the network card is installed on the controller. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Network card control PWB trouble |
| | | | Remedy | 1. Output the NIC Config. Page to check the NIC version. 2. Replace the NIC. |
| | | | Note | |

| Main code | Sub code | Title | The specified mail server or the FTP server is not found. | |
|-----------|----------|------------|---|--|
| CE | 02 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | The specified mail server or the FTP server is not found. |
| | | | Section | |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Improper connection of the network cable |
| | | | Remedy | Check that the network cable is properly connected. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Network setup trouble |
| | | | Remedy | 1. Check that the connected network supports TCP/IP protocol. 2. As Primary/Secondary E-mail Server Address or Destination from Web Page 3. When the above address is described with the Hostname, check that the DNS server is properly set or not. |
| | | | Note | |

| Main code | Sub code | Title | | The specified mail server or the FTP server is not found. | |
|-----------|----------|--------|--|---|---|
| CE | 02 | Case 3 | | Trouble position/ Cause | An error occurs in the SMTP server/ FTP server/ NTS. |
| | | | | Remedy | Check the SMTP server/ FTP server/ NTS for any trouble. |
| | | | | Note | |

| Main code | Sub code | Title | | The specified server suspends response during transmission of images. | |
|-----------|----------|------------|----------------------------|---|--|
| CE | 03 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | The specified server suspends response during transmission of images. | |
| | | | Section | | |
| | | | Operation mode | | |
| | | | Note | | |
| | | Case 1 | Trouble position/ Cause | Improper connection of the network cable | |
| | | | Remedy | Check that the network cable is properly connected. | |
| | | | Note | | |
| | | Case 2 | Trouble position/ Cause | An error occurs in the SMTP server/ FTP server/ NTS. | |
| | | | Remedy | Check the SMTP server/ FTP server/ NTS for any trouble. | |
| | | | Note | | |

| Main code | Sub code | Title | | The entered account name of the FTP server or the password for authentication is invalid. | |
|-----------|----------|------------|----------------------------|--|--|
| CE | 04 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | The entered account name of the FTP server or the password for authentication is invalid. | |
| | | | Section | | |
| | | | Operation mode | | |
| | | | Note | | |
| | | Case 1 | Trouble position/ Cause | Improper connection of the network cable | |
| | | | Remedy | Check that the network cable is properly connected. | |
| | | | Note | | |
| | | Case 2 | Trouble position/ Cause | Improper registration of the account name or improper password registered in the FTP server as the destination | |
| | | | Remedy | Check the account name or the password registered in the FTP server as the destination. | |
| | | | Note | | |

| Main code | Sub code | Title | | The entered directory of the FTP server is invalid. | |
|-----------|----------|------------|----------------------------|--|--|
| CE | 05 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | The entered directory of the FTP server is invalid. | |
| | | | Section | | |
| | | | Operation mode | | |
| | | | Note | | |
| | | Case 1 | Trouble position/ Cause | Improper connection of the network cable | |
| | | | Remedy | Check that the network cable is properly connected. | |
| | | | Note | | |
| | | Case 2 | Trouble position/ Cause | Check for existence of the directory name in the FTP server registered as the destination. | |
| | | | Remedy | Check for existence of the directory name in the FTP server registered as the destination. | |
| | | | Note | | |

| Main code | Sub code | Title | | The specified mail server (POP3) is not found. | |
|-----------|----------|------------|----------------------------|---|--|
| CE | 06 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | The specified mail server (POP3) is not found. POP3 server access error | |
| | | | Section | | |
| | | | Operation mode | | |
| | | | Note | | |
| | | Case 1 | Trouble position/ Cause | Improper connection of the network cable | |
| | | | Remedy | Check connection of the network cable. | |
| | | | Note | | |
| | | Case 2 | Trouble position/ Cause | Network setup trouble | |
| | | | Remedy | 1. Check that the connected network supports TCP/IP protocol. 2. Check on the Web page that the POP3 server address is correctly set. 3. When the above address is described with the Hostname, check that the DNS server is properly set or not. | |
| | | | Note | | |
| | | Case 3 | Trouble position/ Cause | An error occurs in the POP3 server. | |
| | | | Remedy | Check for any error in the POP3 server. | |
| | | | Note | | |

| Main code | Sub code | Title | The entered account name of the POP3 server or the password for authentication is invalid. | |
|-----------|----------|------------|--|---|
| CE | 07 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | The entered account name of the POP3 server or the password for authentication is invalid. POP3 server authentication check error |
| | | | Section | |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Improper connection of the network cable |
| | | | Remedy | Check connection of the network cable. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Improper account name or password registered in the POP3 server |
| | | | Remedy | Check that the account name or the password registered for the POP3 server is correct. |
| | | | Note | |

| Main code | Sub code | Title | The specified mail server (POP3) suspends response. | |
|-----------|----------|------------|---|--|
| CE | 08 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | The specified mail server (POP3) suspends response. POP3 server time-out error |
| | | | Section | |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Improper connection of the network cable |
| | | | Remedy | Check connection of the network cable. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | |
| | | | Remedy | An error occurs in the POP3 server. |
| | | | Note | Check for any error in the POP3 server. |

| Main code | Sub code | Title | CIS shading trouble (White correction) | |
|-----------|----------|------------|--|--|
| E6 | 11 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | CIS shading trouble (White correction) When the power is turned on or when the proper gain setup value is not obtained with SIM 63-2 CIS shading (Retry number: 256 times): CIS white reference plate scan level is abnormal when the lamp is lighted. |
| | | | Section | Scanner |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Defective installation of the harness to the CIS unit CIS unit abnormality |
| | | | Remedy | CIS unit harness check |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Reference white plate dirt |
| | | | Remedy | Clean the reference white plate. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | CIS lighting trouble |
| | | | Remedy | Use SIM 5-3 to check the light quantity of CIS. |
| | | | Note | |
| | | Case 4 | Trouble position/ Cause | Scanner PWB abnormality |
| | | | Remedy | Scanner PWB check |
| | | | Note | |

| Main code | Sub code | Title | CIS communication trouble | |
|-----------|----------|------------|---------------------------|--|
| E6 | 14 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | CIS communication trouble When an error occurs in an access check to the CIS-ASIC on turning on the power or closing the DSFP cover. (Retry number: 5 times) Communication trouble between the scanner PWB and the CIS-ASIC. (Clock synchronization) |
| | | | Section | Scanner |
| | | | Operation mode | |
| | | | Note | |

| Main code | Sub code | Title | CIS communication trouble | |
|-----------|----------|--------|----------------------------|---|
| E6 | 14 | Case 1 | Trouble position/ Cause | Defective installation of the harness to the CIS unit |
| | | | Remedy | Check the harness connected to the CIS unit. |
| | | | Note | |
| | | | | |
| | | Case 2 | Trouble position/ Cause | CIS unit abnormality |
| | | | Remedy | CIS unit check |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | Scanner PWB abnormality |
| | | | Remedy | Scanner PWB check |
| | | | Note | |

| Main code | Sub code | Title | System data trouble | |
|-----------|----------|------------|----------------------------|---|
| E7 | 01 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | While reading/writing the HDD system area data, the HDD returns an error response or no response at all for longer than 30 seconds. |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | No HDD is installed on the MFP control PWB. |
| | | | Remedy | Check installation status of the HDD on the MFP control PWB. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | HDD does not properly function. |
| | | | Remedy | <ul style="list-style-type: none"> CHECK connection between the HDD and MFP control. Perform an HDD read/write test using SiM 62-2/3. Replace HDD. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | MFP control PWB abnormality |
| | | | Remedy | Replace the MFP control PWB. |
| | | | Note | |

| Main code | Sub code | Title | Laser trouble | |
|-----------|----------|------------|----------------------------|---|
| E7 | 02 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Laser trouble The BD signal from the LSU is kept OFF or ON. When the polygon motor rotation is started and three successive BDT signals of I/O ASIC are detected after forced lighting of laser. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | The connector to the LSU or the harness in the LSU is disconnected or broken. |
| | | | Remedy | Check for disconnection of the connector to the LSU. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | The polygon motor does not rotate properly. |
| | | | Remedy | Check that the polygon motor rotated properly or not. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | The position of the laser home position sensor in the LSU is shifted. |
| | | | Remedy | Use SiM 61-1 to check the LSU operation. |
| | | | Note | |
| | | Case 4 | Trouble position/ Cause | A proper voltage is not supplied to the power line of the laser. |
| | | | Remedy | Replace the LSU unit. |
| | | | Note | |
| | | Case 5 | Trouble position/ Cause | Defective lighting of the laser emitting diode |
| | | | Remedy | Check lighting of the laser emitting diode. |
| | | | Note | |
| | | Case 6 | Trouble position/ Cause | PCU PWB abnormality |
| | | | Remedy | Replace the PCU PWB. |
| | | | Note | |
| | | Case 7 | Trouble position/ Cause | MFP control ASIC PWB abnormality |
| | | | Remedy | Replace the MFP control PWB. |
| | | | Note | |

| Main code | Sub code | Title | HDD trouble | |
|-----------|----------|------------|----------------------------|--|
| E7 | 03 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | HDD trouble Data abnormality in the HDD file management area (cluster chain corrupted) The HDD sends an error response or does not respond for 30 sec. |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | The HDD is not installed properly to the MFP control PWB. |
| | | | Remedy | Check installation of the HDD to the MFP control PWB. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | The HDD of the MFP control PWB does not operate properly. |
| | | | Remedy | Check connection of the harness to the HDD of the MFP control PWB. Use SIM 62-2, -3 to check read/write of the HDD. Replace the HDD. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | MFP control ASIC PWB abnormality |
| | | | Remedy | Replace the MFP control PWB. |
| | | | Note | |

| Main code | Sub code | Title | Decode error trouble | |
|-----------|----------|------------|----------------------------|--|
| E7 | 06 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Decode error trouble A decode error occurs in making an image. |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Garbled data in input from PCI to PM DM trouble Data are garbled in image compression/transfer. |
| | | | Remedy | Check installation of the PWB. (PCI bus) If the job at occurrence is FAX, check installation of the FAX PWB. For the other cases, check the MFP control PWB. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | MFP control ASIC PWB abnormality |
| | | | Remedy | Replace the MFP control PWB. |

| Main code | Sub code | Title | CCD shading trouble (Black correction) | |
|-----------|----------|------------|--|---|
| E7 | 10 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Shading trouble (Black correction) CCD black scan level abnormality when the copy lamp is turned off. When the proper offset setup value is not obtained at turning on the power or CCD shading with SIM 63-2. |
| | | | Section | Scanner |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Defective installation of the flat cable to the CCD unit |
| | | | Remedy | Check installation of the flat cable to the CCD unit. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | CCD unit abnormality |
| | | | Remedy | CCD unit check |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | Scanner PWB abnormality |
| | | | Remedy | Scanner PWB check |
| | | | Note | |

| Main code | Sub code | Title | CCD shading trouble (White correction all pixel adjustment) | |
|-----------|----------|------------|---|---|
| E7 | 11 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Shading trouble (White correction all pixel adjustment) The CCD white reference plate scan level abnormality when lighting the copy lamp When the proper gain setup value is not obtained at turning on the power or CCD shading with SIM 63-2. |
| | | | Section | Scanner |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Mirror, lens, reference white plate dirt |
| | | | Remedy | Clean the mirror, the lens, and the reference white plate. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Copy lamp lighting abnormality |
| | | | Remedy | Check the light quantity and lighting of the copy lamp. (SIM 5-3) |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | Defective installation of the flat cable to the CCD unit Improper installation of the CCD unit CCD unit abnormality |
| | | | Remedy | CCD unit check |
| | | | Note | |
| | | Case 4 | Trouble position/ Cause | Scanner PWB abnormality |
| | | | Remedy | Scanner PWB check |
| | | | Note | |

| Main code | Sub code | Title | CCD shading trouble (White correction center adjustment) | |
|-----------|----------|------------|--|--|
| E7 | 12 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Shading trouble (White correction center adjustment) The CCD white reference plate scan level abnormality when lighting the copy lamp When the proper gain setup value is not obtained at turning on the power or CCD shading with SIM 63-2. |
| | | | Section | Scanner |
| | | | Operation mode | |
| | | | Note | |

| Main code | Sub code | Title | CCD shading trouble (White correction center adjustment) | |
|-----------|----------|--------|--|---|
| E7 | 12 | Case 1 | Trouble position/ Cause | Mirror, lens, reference white plate dirt |
| | | | Remedy | Clean the mirror, the lens, and the reference white plate. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Copy lamp lighting abnormality |
| | | | Remedy | Check the light quantity and lighting of the copy lamp. (SIM 5-3) |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | Defective installation of the flat cable to the CCD unit Improper installation of the CCD unit CCD unit abnormality |
| | | | Remedy | CCD unit check |
| | | | Note | |
| | | Case 4 | Trouble position/ Cause | Scanner PWB abnormality |
| | | | Remedy | Scanner PWB check |
| | | | Note | |

| Main code | Sub code | Title | CCD communication trouble | |
|-----------|----------|------------|---------------------------|--|
| E7 | 14 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | CCD communication trouble Communication trouble between the scanner PWB and the CCD-ASIC. (Clock synchronization) When an error occurs in the access check to the CCD-ASIC executed at turning on the power. |
| | | | Section | Scanner |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Defective installation of the harness connected to the CCD unit |
| | | | Remedy | Check the harness connected to the CCD unit. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | CCD unit abnormality |
| | | | Remedy | CCD unit check |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | Scanner PWB abnormality |
| | | | Remedy | Scanner PWB check |
| | | | Note | |

| Main code | Sub code | Title | LSU connection trouble | |
|-----------|----------|------------|----------------------------|---|
| E7 | 50 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | LSU connection trouble The LSU connected does not conform to the machine specifications. When the combination of the pattern of an input port on the PCU and the pattern of a port connected to the LSU is not proper. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | LSU connection trouble |
| | | | Remedy | Check connection between the PCU and the LSU and the harness. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | PCU PWB trouble LSU trouble |
| | | | Remedy | Check the LSU. Check the PCU. |
| | | | Note | |

| Main code | Sub code | Title | Incompatibility check (Engine (PCU) detection) | |
|-----------|----------|------------|--|--|
| E7 | 55 | Phenomenon | Display | Lamp |
| | 56 | | | Message |
| | 57 | | Details | Incompatibility check trouble An error is detected in the internal incompatibility check in the engine (PCU). |
| | | | Section | Engine (PCU) |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | PCU PWB trouble or a improper PCU PWB has been installed. |
| | | | Remedy | Check the PCU PWB. |
| | | | Note | |

| Main code | Sub code | Title | Controller connection trouble | |
|-----------|----------|------------|-------------------------------|--|
| E7 | 60 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Controller connection trouble Incompatibility trouble between the controller and the engine |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |

| Main code | Sub code | Title | Controller connection trouble | |
|-----------|----------|--------|-------------------------------|--|
| E7 | 60 | Case 1 | Trouble position/ Cause | Improper combination of the controller PWB and the engine |
| | | | Remedy | Check the controller PWB. Check combination of the controller PWB and the engine. |
| | | | Note | |

| Main code | Sub code | Title | Incompatibility check (MFP controller detection) | |
|-----------|----------|------------|--|---|
| E7 | 65 | Phenomenon | Display | Lamp |
| | 66 | | | Message |
| | 67 | | Details | Incompatibility check trouble An error is detected in the internal incompatibility check in the MFP control PWB. |
| | | | Section | MFP control PWB |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | MFP control PWB trouble or a improper MFP control PWB has been installed. |
| | | | Remedy | Check the MFP control PWB and repair it as required. |
| | | | Note | |

| Main code | Sub code | Title | Communication trouble between the MFP control and the scanner (MFP control detection) | |
|-----------|----------|------------|---|--|
| E7 | 80 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Communication trouble between the MFP control and the scanner (MFP control detection) Communication establishment error/ framing/ parity/ protocol error Follows the communication protocol specifications. Communication error, timing abnormality of the communication data and the communication signal line |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |

| Main code | Sub code | Title | Communication trouble between the MFP control and the scanner (MFP control detection) | |
|-----------|----------|--------|---|--|
| E7 | 80 | Case 1 | Trouble position/ Cause | Defective connection of the slave unit PWB connector Defective harness between the slave unit PWB and the MFP control PWB Slave unit PWB mother board connector pin breakage |
| | | | Remedy | Check connection of the connector between the slave unit PWB and the MFP control PWB and the harness. Check grounding of the machine. |
| | | | Note | |

| Main code | Sub code | Title | MFP control-PCU communication trouble (MFP control detection) | |
|-----------|----------|------------|---|--|
| E7 | 90 | Phenomenon | Display | Lamp Message |
| | | | Details | MFP control-PCU communication trouble (MFP control detection) Communication establishment error/ framing/ parity/ protocol error Follows the communication protocol specifications. Communication error, timing abnormality of the communication data and the communication signal line |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Defective connection of the slave unit PWB connector Defective harness between the slave unit PWB and the MFP control PWB Slave unit PWB mother board connector pin breakage |
| | | | Remedy | Check connection of the connector between the slave unit PWB and the MFP control PWB and the harness. Check grounding of the machine. |
| | | | Note | |

| Main code | Sub code | Title | Auto developer adjustment trouble (Overtoner error) | |
|-----------|----------|------------|---|---|
| EE | EL | Phenomenon | Display | Lamp Message |
| | | | Details | Auto developer adjustment trouble (Overtoner error) When executing the automatic development adjustment, toner concentration sensor output level is 1.5V or below. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Toner density sensor trouble Charging voltage and developing voltage trouble Toner density trouble Developing unit trouble PCU PWB trouble |
| | | | Remedy | Use SIM 25-2 to perform the automatic developing adjustment. |
| | | | Note | |

| Main code | Sub code | Title | Auto developer adjustment trouble (Undertoner error) | |
|-----------|----------|------------|--|--|
| EE | EU | Phenomenon | Display | Lamp Message |
| | | | Details | Auto developer adjustment trouble (Undertoner error) When executing the automatic development adjustment, toner concentration sensor output level is 3.5V or above. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Toner density sensor trouble Charging voltage and developing voltage trouble Toner density trouble Developing unit trouble PCU PWB trouble |
| | | | Remedy | Use SIM 25-2 to perform the automatic developing adjustment. |
| | | | Note | |

| Main code | Sub code | Title | Finisher communication trouble | |
|-----------|----------|------------|--------------------------------|--|
| F1 | 00 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher communication trouble An error in the communication line test after turning on the power or canceling the simulation Communication error with the finisher Follows the communication protocol specifications. Communication error, timing abnormality of the communication data and the communication signal line |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Improper connection or disconnection of the connector or harness between the machine and the finisher |
| | | | Remedy | Check the connector and the harness in the communication line. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Finisher control PWB trouble Control PWB (PCU) trouble |
| | | | Remedy | Replace the finisher control PWB or the PCU PWB. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | Malfunction caused by noises |
| | | | Remedy | Canceled by turning ON/OFF the power. |
| | | | Note | |

| Main code | Sub code | Title | Finisher transport motor abnormality | |
|-----------|----------|------------|--------------------------------------|---|
| F1 | 02 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher transport motor abnormality When opening the shutter unit, the opening process is not completed in 1sec. When closing the shutter unit, the closing process is not completed in 1sec. When the tray lift unit is operating in the dangerous area, "Not closed state" of the shutter close sensor is detected. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble |
| | | | Remedy | Use SIM 3-3 to check the transport motor operation. |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | Finisher oscillation motor trouble | |
|-----------|----------|------------|------------------------------------|--|
| F1 | 03 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher oscillation motor trouble When opening the oscillation unit, the opening process is not completed in 1sec. When closing the oscillation unit, the closing operation is not completed in 3sec. When the tray lift unit is operating in the dangerous area, "Not closed state" of the oscillation unit close sensor is detected. When controlling the oscillation unit speed, the encoder input cannot be detected within a specified time. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble |
| | | | Remedy | Use SIM 3-3 to check the motor operation. |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | Finisher staple shift motor trouble | |
|-----------|-----------|------------|-------------------------------------|---|
| F1 | 08 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher staple shift motor trouble When the stapler shift motor does not move from the home position in 4sec when operating the stapler shift motor. When the stapler shift motor does not return to the home position in 4sec when operating the stapler shift motor. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble |
| | | | Remedy | Use SIM 3-3 to check the staple shift motor operation. |
| | | | Note | |

| Main code | Sub code | Title | Finisher load capacity sensor trouble | |
|-----------|-----------|------------|---------------------------------------|--|
| F1 | 09 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher load capacity sensor trouble When the received data on performing the sensor test at turning on the power are outside the specified range. When the detected data on calculation of the correction value are outside the specified range. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Sensor breakage Harness disconnection Console finisher control PWB trouble |
| | | | Remedy | Use SIM 3-2 to check the sensor operation. |
| | | | Note | |

| Main code | Sub code | Title | Finisher/staple motor trouble | |
|-----------|-----------|------------|-------------------------------|---|
| F1 | 10 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher/staple motor trouble When the staple unit does not shift from HP within 0.5sec in staple process. When a stapler jam is detected and the staple motor is reversed, the staple motor does not return to HP in 0.5sec. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble |
| | | | Remedy | Use SIM 3-3 to check the staple shift motor operation. |
| | | | Note | |

| Main code | Sub code | Title | Finisher/pusher motor trouble | |
|-----------|-----------|------------|-------------------------------|---|
| F1 | 11 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher/pusher motor trouble When learning the paper exit roller speed, the process is not completed in 10sec. When controlling the paper exit roller speed, an encoder input is not detected in a specified time. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble |
| | | | Remedy | Use SIM 3-3 to check the pusher motor operation and the paddle solenoid operation, or use SIM 3-2 to check the boomerang rotations sensor. |
| | | | Note | |

| Main code | Sub code | Title | | Finisher tray lift motor trouble | |
|-----------|----------|------------|-------------------------|--|--|
| F1 | 15 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | Finisher tray lift motor trouble When operating the tray lift unit, the process is not completed in 12sec. When the tray lift unit is lifting, the tray lift unit upper limit sensor ON is detected. When operating the tray lift unit, an encoder input is not detected in 0.2sec. | |
| | | | Section | Finisher | |
| | | | Operation mode | | |
| | | | Note | | |
| | | Case 1 | Trouble position/ Cause | Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble | |
| | | | Remedy | Use SIM 3-3 to check the elevator motor operation. | |
| | | | Note | | |
| | | | | | |

| Main code | Sub code | Title | | Finisher/alignment motor trouble | |
|-----------|----------|------------|-------------------------|--|--|
| F1 | 19 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | Finisher/alignment motor trouble When operating the alignment motor, it does not move from the home position in 2sec. When operating the alignment motor, it does not return to the home position in 2sec. | |
| | | | Section | Finisher | |
| | | | Operation mode | | |
| | | | Note | | |
| | | Case 1 | Trouble position/ Cause | Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble | |
| | | | Remedy | Use SIM 3-3 to check the motor operation. | |
| | | | Note | | |
| | | | | | |

| Main code | Sub code | Title | | Finisher saddle folding sensor trouble | |
|-----------|----------|------------|-------------------------|---|--|
| F1 | 31 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | Finisher saddle folding sensor trouble When the motor rotation speed (linear velocity) at every 200msec falls below the specified level. When moving to the home position, the home position sensor does not turn on within the specified time. When shifting from the home position to the lead edge, the home position sensor does not turn off within the specified time. | |
| | | | Section | Finisher | |
| | | | Operation mode | | |
| | | | Note | | |
| | | Case 1 | Trouble position/ Cause | Sensor breakage Harness disconnection Console finisher control PWB trouble | |
| | | | Remedy | Use SIM 3-2 to check the sensor operation. | |
| | | | Note | | |
| | | | | | |

| Main code | Sub code | Title | | Finisher-saddle communication trouble | |
|-----------|----------|------------|----------------|--|--|
| F1 | 32 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | Communication error between the finisher and the saddle When the motor rotation speed (linear velocity) at every 200msec falls below the specified level. When moving to the home position, the home position sensor does not turn on within the specified time. When shifting from the home position to the lead edge, the home position sensor does not turn off within the specified time. | |
| | | | Section | Finisher | |
| | | | Operation mode | | |
| | | | Note | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| Main code | Sub code | Title | Finisher-saddle communication trouble | |
|-----------|-----------|--------|---------------------------------------|---|
| F1 | 32 | Case 1 | Trouble position/ Cause | Improper connection or disconnection of the connector and the harness between the finisher and the saddle unit. |
| | | | Remedy | Check the connector and the harness in the communication line. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Finisher control PWB trouble Control PWB (PCU) trouble |
| | | | Remedy | Replace the finisher control PWB. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | Malfunction caused by noises |
| | | | Remedy | Canceled by turning ON/OFF the power. |
| | | | Note | |

| Main code | Sub code | Title | Finisher/punch shift motor trouble | |
|-----------|-----------|------------|------------------------------------|--|
| F1 | 33 | Phenomenon | Display | Lamp Message |
| | | | Details | Finisher/punch shift motor trouble When operating the punch shift motor, it does not move from the home position in 4sec. When operating the punch shift motor, it does not return to the home position in 4sec. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble |
| | | | Remedy | Use SIM 3-3 to check the motor operation. |
| | | | Note | |

| Main code | Sub code | Title | Finisher/punch motor trouble | |
|-----------|-----------|------------|------------------------------|---|
| F1 | 34 | Phenomenon | Display | Lamp Message |
| | | | Details | Finisher/punch motor trouble When learning the punch unit, it does not complete normally and does not return to the home position. When executing punching, it does not shift from the home position in 0.2sec, or it overruns to go into non-HP state. When operating the punch unit, the encoder input cannot be detected within 0.1sec. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Motor lock Motor RPM abnormality Overcurrent to the motor Finisher control PWB trouble |
| | | | Remedy | Use SIM 3-3 to check the motor operation. |
| | | | Note | |

| Main code | Sub code | Title | Finisher/ backup RAM trouble | |
|-----------|-----------|------------|------------------------------|---|
| F1 | 37 | Phenomenon | Display | Lamp Message |
| | | | Details | Finisher/ backup RAM trouble When backup RAM data check sum is NG when turning on the power. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Finisher control PWB trouble Malfunction caused by noises |
| | | | Remedy | Replace the finisher control PWB. |
| | | | Note | |

| Main code | Sub code | Title | Finisher/punch backup ROM trouble | |
|-----------|----------|------------|-----------------------------------|--|
| F1 | 38 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher/punch backup ROM trouble Punch unit backup RAM data are garbled. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Punch control PWB trouble Malfunction caused by noises |
| | | | Remedy | Replace the punch control PWB. |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | Finisher/saddle positioning plate motor trouble | |
|-----------|----------|------------|---|---|
| F1 | 41 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher/saddle positioning plate motor trouble The positioning motor HP sensor does not turn on within 1.33sec after starting the motor. The positioning motor HP sensor does not turn off within 1sec after starting the motor. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Finisher control PWB trouble Malfunction caused by noises |
| | | | Remedy | Replace the finisher control PWB. |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | Finisher/saddle guide motor trouble | |
|-----------|----------|------------|-------------------------------------|--|
| F1 | 42 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher/saddle guide motor trouble It does not return to the home position within the specified time from starting the guide motor. The HP sensor does not turn off within the specified time when shifting from the home position to the specified position. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Finisher control PWB trouble Malfunction caused by noises |
| | | | Remedy | Replace the finisher control PWB. |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | Finisher/saddle alignment motor trouble | |
|-----------|----------|------------|---|--|
| F1 | 43 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher/saddle alignment motor trouble When shifting to the home position, the home position sensor does not turn on. The HP sensor does not turn off within the specified time when shifting from the home position to the specified position. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Finisher control PWB trouble Malfunction caused by noises |
| | | | Remedy | Replace the finisher control PWB. |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | Finisher/saddle bottom staple motor trouble | |
|-----------|----------|------------|---|--|
| F1 | 44 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher/saddle bottom staple motor trouble The home position sensor does not turn off within the specified time after normal starting of the motor. The home positions sensor does not turn on within the specified time after reverse starting of the motor in recovery. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Finisher control PWB trouble Malfunction caused by noises |
| | | | Remedy | Replace the finisher control PWB. |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | Finisher/saddle front staple motor trouble | |
|-----------|----------|------------|--|---|
| F1 | 45 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher/saddle front staple motor trouble The home position sensor does not turn off within the specified time after normal starting of the motor. The home positions sensor does not turn on within the specified time after reverse starting of the motor in recovery. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Finisher control PWB trouble Malfunction caused by noises |
| | | | Remedy | Replace the finisher control PWB. |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | Finisher/saddle push motor trouble | |
|-----------|----------|------------|------------------------------------|--|
| F1 | 46 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher/saddle push motor trouble When moving to the home position, the home position sensor does not turn on within the specified time. The push lead edge sensor does not turn on within the specified time after shifting from the home position. When shifting from the home position to the lead edge, the home position sensor does not turn off within the specified time. The lead edge sensor does not turn off within the specified time when shifting from the lead edge position to the home position. The motor RPM at every 50msec falls below the specified level. The lead edge sensor does not turn on within the specified time when shifting from the home position to the lead edge position. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Finisher control PWB trouble Malfunction caused by noises |
| | | | Remedy | Replace the finisher control PWB. |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | Finisher/saddle sensor connector connection trouble | |
|-----------|----------|------------|---|---|
| F1 | 51 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher/saddle sensor connector connection trouble The connector connection detection input of the guide HP sensor is off. The connector connection detection input of the push lead edge sensor is off. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Finisher control PWB trouble Malfunction caused by noises |
| | | | Remedy | Replace the finisher control PWB. |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | Finisher/micro switch trouble | |
|-----------|----------|------------|-------------------------------|---|
| F1 | 52 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher/micro switch trouble With all cover PI (photo sensor) ON, the transport cover MS is off for 1sec continuously from starting copying. With all cover PI (photo sensor) ON, the front cover MS is off for 1sec continuously from starting copying. With all cover PI (photo sensor) ON, the paper exit cover MS is off for 1sec continuously from starting copying. |
| | | | Section | Finisher |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Finisher control PWB trouble Malfunction caused by noises |
| | | | Remedy | Replace the finisher control PWB. |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | Finisher-inserter communication trouble | |
|-----------|----------|------------|---|--|
| F1 | 60 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Finisher/inserter communication trouble |
| | | | Section | Inserter |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Improper connection or disconnection of the connector and the harness between the finisher and the inserter unit |
| | | | Remedy | Check the connector and the harness in the communication line. |
| | | | Note | |
| | | | | |
| | | Case 2 | Trouble position/ Cause | Finisher control PWB trouble Control PWB (PCU) trouble |
| | | | Remedy | Replace the finisher control PWB. |
| | | | Note | |
| | | | | |
| | | Case 3 | Trouble position/ Cause | Malfunction caused by noises |
| | | | Remedy | Canceled by turning ON/OFF the power. |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | Inserter/EEPROM trouble | |
|-----------|----------|------------|-------------------------|---|
| F1 | 61 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Inserter/EEPROM trouble Data read failure on turning on the power |
| | | | Section | Inserter |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | EEPROM trouble Control circuit runaway due to noises |
| | | | Remedy | Check that the EEPROM is properly installed. Replace the inserter PWB. |
| | | | Note | |
| | | | | |
| | | Case 2 | Trouble position/ Cause | Inserter PWB EEPROM access circuit trouble |
| | | | Remedy | Replace the inserter PWB. |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | | | Inserter/reverse sensor trouble |
|-----------|-----------|------------|----------------------------|---|---------------------------------|
| F1 | 62 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | Inserter/reverse sensor trouble Auto adjustment failure on turning on the power | |
| | | | Section | Inserter | |
| | | | Operation mode | | |
| | | | Note | | |
| | | Case 1 | Trouble position/ Cause | Auto adjustment failure on turning on the power Sensor breakage Harness disconnection Inserter PWB trouble | |
| | | | Remedy | Use SIM 3-2 to check the sensor operation. | |
| | | | Note | | |

| Main code | Sub code | Title | | | Toner control sensor open |
|-----------|-----------|------------|----------------------------|--|---------------------------|
| F2 | 00 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | Toner control sensor output open After completion of auto development adjustment, during process operation, the toner sensor output is detected as 0.5V or less or 4.5V or above three times. | |
| | | | Section | Engine | |
| | | | Operation mode | | |
| | | | Note | | |
| | | Case 1 | Trouble position/ Cause | Connector harness trouble Connector not connected. | |
| | | | Remedy | Check connection of the toner control sensor. Check connection of the connector harness to the main PWB. Check for disconnection of the harness. | |
| | | | Note | | |

| Main code | Sub code | Title | | | Toner supply abnormality |
|-----------|-----------|------------|----------------------------|---|--------------------------|
| F2 | 02 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | Toner supply abnormality Toner remains in the toner bottle when undertoner is detected by the toner concentration sensor in the developing unit. | |
| | | | Section | Engine | |
| | | | Operation mode | | |
| | | | Note | | |
| | | Case 1 | Trouble position/ Cause | Toner concentration sensor trouble Toner remaining quantity sensor trouble Connector harness trouble for the above sensors. | |
| | | | Remedy | Check connector of hopper unit toner motor (TM1) Check connector of toner bottle toner motor (TM2) Check connection of the connector harnesses to the main PWB. Check broken harness for above connections. Check output of the toner concentration sensor (SIM25-1) Check output of the toner remaining quantity sensor (SIM10-2) | |
| | | | Note | | |

| Main code | Sub code | Title | | | Improper cartridge (Life cycle error, etc.) |
|-----------|-----------|------------|----------------------------|---|---|
| F2 | 04 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | An improper toner bottle is inserted. CRUM (IC chip trouble) | |
| | | | Section | Engine | |
| | | | Operation mode | | |
| | | | Note | | |
| | | Case 1 | Trouble position/ Cause | IC chip trouble Improper cartridge | |
| | | | Remedy | Insert a proper cartridge. | |
| | | | Note | | |

| Main code | Sub code | Title | CRUM error | |
|-----------|----------|------------|-------------------------|---|
| F2 | 05 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Communication with the IC chip cannot be made. Data write failure to the CRUM or data read failure from the CRUM occurs 3 times continuously except for toner cartridge installation detection. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | IC chip trouble Improper cartridge |
| | | | Remedy | Insert a proper cartridge. |
| | | | Note | |

| Main code | Sub code | Title | Process control trouble (Photoconductor surface reflection rate abnormality) | |
|-----------|----------|------------|--|--|
| F2 | 31 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Process control trouble (Photoconductor surface reflection rate abnormality) Before starting process control, the drum surface is read by the image density sensor to make the sensor gain adjustment so that the output is fixed to a certain level. Though the sensor gain is changed, the output is not fixed to a certain level. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Image density sensor trouble |
| | | | Remedy | Use SIM 44-02 to perform the process control sensor gain adjustment. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Improper connection of the harness between the PCU PWB and the image density sensor |
| | | | Remedy | If "Error" is displayed, it may be considered as a breakdown. Check the sensor and the harness. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | The image density sensor is dirty. OPC drum cleaning trouble |
| | | | Remedy | If the adjustment is completed, check the drum surface conditions. |
| | | | Note | |

| Main code | Sub code | Title | Process control trouble (Drum marking scan trouble) | |
|-----------|----------|------------|---|---|
| F2 | 32 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Process control trouble (Drum marking scan trouble) The drum marking size, density, or the number of units is improper. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Drum marking sensor trouble |
| | | | Remedy | Use SIM 44-02 to perform the process control sensor gain adjustment. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Improper connection of the harness between the PCU PWB and the drum marking sensor |
| | | | Remedy | If "Error" is displayed, it may be considered as a breakdown. Check the sensor and the harness. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | The drum marking sensor is dirty. OPC drum cleaning trouble |
| | | | Remedy | If the adjustment is completed, check the drum surface conditions. |
| | | | Note | |

| Main code | Sub code | Title | Drum marking sensor gain adjustment error | |
|-----------|----------|------------|---|--|
| F2 | 37 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Drum marking sensor gain adjustment error Before starting process control, the drum marking area surface is read by the sensor to make the sensor gain adjustment so that the output is fixed to a certain level. Though the sensor gain is changed, the output is not fixed to a certain level. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Drum marking sensor trouble |
| | | | Remedy | Use SIM 44-02 to perform the process control sensor gain adjustment. |
| | | | Note | |

| Main code | Sub code | Title | Drum marking sensor gain adjustment error | |
|-----------|----------|--------|---|---|
| F2 | 37 | Case 2 | Trouble position/ Cause | Improper connection of the harness between the PCU PWB and the drum marking sensor |
| | | | Remedy | If "Error" is displayed, it may be considered as a breakdown. Check the sensor and the harness. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | The drum marking sensor is dirty. OPC drum cleaning trouble |
| | | | Remedy | If the adjustment is completed, check the drum surface conditions. |
| | | | Note | |

| Main code | Sub code | Title | Process thermistor breakdown | |
|-----------|----------|------------|------------------------------|--|
| F2 | 39 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Process thermistor breakdown When the process thermistor detection, 3.03V or above, or 0.28V or below is detected once. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Improper connection of the process thermistor harness. |
| | | | Remedy | Check connection of the connector and the harness of the process thermistor. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Process thermistor trouble |
| | | | Remedy | Replace the process thermistor. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | PCU PWB trouble |
| | | | Remedy | Check the PCU PWB. |
| | | | Note | |

| Main code | Sub code | Title | Developing thermistor breakdown | |
|-----------|----------|------------|---------------------------------|---|
| F2 | 46 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Developing thermistor open or short. Three successive values of 244 or above, or values of 20 or below, are detected at the developing thermistor. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Developing thermistor harness connection trouble |
| | | | Remedy | Check connection of the connector and the harness of the developing thermistor. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Developing thermistor trouble |
| | | | Remedy | Check the developing thermistor |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | PCU PWB trouble |
| | | | Remedy | Check the PCU PWB. |
| | | | Note | |

| Main code | Sub code | Title | Developing humidity sensor breakdown | |
|-----------|----------|------------|--------------------------------------|---|
| F2 | 48 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Developing humidity sensor open or short. A value of greater than or equal to 255 or above, or value of 7 or below, is detected at the developing humidity sensor. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Developing humidity sensor harness connection trouble |
| | | | Remedy | Check connection of the connector and the harness of the developing humidity sensor. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Developing humidity sensor trouble |
| | | | Remedy | Check the developing humidity sensor |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | PCU PWB trouble |
| | | | Remedy | Check the PCU PWB. |
| | | | Note | |

| Main code | Sub code | Title | | Machine tray 1 lift-up trouble | |
|-----------|----------|------------|----------------------------|--|---|
| F3 | 12 | Phenomenon | | Display | Lamp |
| | | | | | Message |
| | | | | Details | Machine tray 1 lift-up trouble PED does not turn on within the specified time. LUD does not turn on within the specified time. The trouble occurs 3 times continuously that the upper limit sensor does not turn on by lift-up operation for 21sec when inserting a tray or for 2sec when printing. For the first and the second times, guide the user to pull out the tray in case of a tray size error. |
| | | | | Section | Engine |
| | | | | Operation mode | |
| | | | | Note | |
| | | Case 1 | Trouble position/ Cause | PED, LUD trouble No. 1 tray lift-up motor trouble Improper connection of the harness of the PCU PWB, the lift-up unit, and the paper feed unit | |
| | | | Remedy | Check the harness and connector of PED and LUD Lift-up trouble unit check. Use SIM 15 to cancel the trouble. | |
| | | | Note | | |

| Main code | Sub code | Title | | Machine tray 2 lift-up trouble | |
|-----------|----------|------------|--|--------------------------------|---|
| F3 | 22 | Phenomenon | | Display | Lamp |
| | | | | | Message |
| | | | | Details | Machine tray 2 lift-up trouble MCPED does not turn on within the specified time. MCLUD does not turn on within the specified time. The trouble occurs 3 times continuously that the upper limit sensor does not turn on by lift-up operation for 10sec when inserting a tray or for 2sec when printing. For the first and the second times, guide the user to pull out the tray in case of a tray size error. |
| | | | | Section | Engine |
| | | | | Operation mode | |
| | | | | Note | |

| Main code | Sub code | Title | | Machine tray 2 lift-up trouble | |
|-----------|----------|--------|--|--------------------------------|--|
| F3 | 22 | Case 1 | | Trouble position/ Cause | MCPED, MCLUD trouble No. 2 tray lift-up motor trouble Improper connection of the harness of the PCU PWB, the lift-up unit, and the paper feed unit |
| | | | | Remedy | Check the harness and the connector of MCPED and MCLUD. Lift-up trouble unit check. Use SIM 15 to cancel the trouble. |
| | | | | Note | |

| Main code | Sub code | Title | | Machine tray 3 lift-up trouble | |
|-----------|----------|------------|----------------------------|--|---|
| F3 | 32 | Phenomenon | | Display | Lamp |
| | | | | | Message |
| | | | | Details | Machine tray 3 lift-up trouble MCPED does not turn on within the specified time. MCLUD does not turn on within the specified time. The trouble occurs 3 times continuously that the upper limit sensor does not turn on by lift-up operation for 10sec when inserting a tray or for 2sec when printing. For the first and the second times, guide the user to pull out the tray in case of a tray size error. |
| | | | | Section | Engine |
| | | | | Operation mode | |
| | | | | Note | |
| | | Case 1 | Trouble position/ Cause | MCPED, MCLUD trouble No. 3 tray lift-up motor trouble Improper connection of the harness of the PCU PWB, the lift-up unit, and the paper feed unit | |
| | | | Remedy | Check the harness and the connector of MCPED and MCLUD. Lift-up trouble unit check | |
| | | | Note | | |

| Main code | Sub code | Title | Machine tray 4 lift-up trouble | |
|-----------|----------|------------|--------------------------------|---|
| F3 | 42 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Machine tray 4 lift-up trouble MCPED does not turn on within the specified time. MCLUD does not turn on within the specified time. The trouble occurs 3 times continuously that the upper limit sensor does not turn on by lift-up operation for 10sec when inserting a tray or for 2sec when printing. For the first and the second times, guide the user to pull out the tray in case of a tray size error. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | MCPED, MCLUD trouble No. 4 tray lift-up motor trouble Improper connection of the harness of the PCU PWB, the lift-up unit, and the paper feed unit |
| | | | Remedy | Check the harness and the connector of MCPED and MCLUD. Lift-up trouble unit check |
| | | | Note | |
| | | | | |

| Main code | Sub code | Title | 38V voltage trouble | |
|-----------|----------|------------|----------------------------|---|
| F4 | 38 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | 38V voltage falls or rises. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Improper connection or disconnection of the connector and the harness |
| | | | Remedy | Check the connector and the harness of the power line. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | PCU PWB trouble Power unit trouble |
| | | | Remedy | Check 38V power source in the power unit and the PCU PWB. |
| | | | Note | |

| Main code | Sub code | Title | MFP control-FAX communication trouble (MFP control detection) | |
|-----------|----------|------------|---|---|
| F6 | 00 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | MFP control-FAX communication trouble (MFP control detection) The booting sequence by the command line (9600bps, serial) is not completed normally. Communication establishment error/ framing/ parity/ protocol error |
| | | | Section | FAX |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Defective connection of the slave unit PWB connector Defective harness between the slave unit PWB and the MFP control PWB Slave unit PWB mother board connector pin breakage |
| | | | Remedy | Use SIM 25-2 to perform the automatic developing adjustment. Check connection of the connector between the slave unit PWB and the MFP control PWB and the harness. |
| | | | Note | Check grounding of the machine. |
| | | Case 2 | Trouble position/ Cause | Slave unit ROM trouble/ no ROM/ Reversed insertion of ROM/ ROM pin breakage |
| | | | Remedy | Check the ROM on the slave unit PWB. |
| | | | Note | |

| Main code | Sub code | Title | FAX expansion Flash memory trouble (MFP control detection) | |
|-----------|----------|------------|--|--|
| F6 | 01 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | FAX expansion Flash memory trouble (MFP control detection) The expansion flash memory inserted to the FAX I/F PWB could not be cleared. |
| | | | Section | FAX |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Initialization of the FAX expansion memory failed, which is required for a new memory that is inserted to the PWB. |
| | | | Remedy | Use SIM 66-10 to clear the expansion flash memory. |
| | | | Note | |

| Main code | Sub code | Title | FAX write protect cancel | |
|-----------|----------|------------|----------------------------|--|
| F6 | 20 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | The write protect jumper of the FAX interface PWB is released. |
| | | | Section | FAX |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | The FAX write protect pin is set to Write Enable. |
| | | | Remedy | Check the write protect pin in the FAX interface PWB. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | FAX interface PWB trouble FAX PWB trouble |
| | | | Remedy | Replace the FAX PWB. Replace the FAX interface PWB. |
| | | | Note | |

| Main code | Sub code | Title | FAX modem operation abnormality | |
|-----------|----------|------------|---------------------------------|---|
| F6 | 04 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | FAX modem operation abnormality The initializing process of the modem chip in the FAX PWB is not completed normally. |
| | | | Section | FAX |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | SW101 in the FAX PWB tries to perform normal operation on the boot side. |
| | | | Remedy | Set SW101 on the FAX PWB to other than the boot side, and turn on the power again. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | FAX PWB modem chip operation trouble |
| | | | Remedy | Replace the FAX PWB. |
| | | | Note | |

| Main code | Sub code | Title | Abnormal combination of the TEL/LIU PWB and the FAX soft switch | |
|-----------|----------|------------|---|--|
| F6 | 21 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Combination error of TEL/LIU PWB and software If the destination of the installed TEL/LIU PWB differs from that of the FAX soft switch, it is judged as an error. |
| | | | Section | FAX |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | The destination of the installed TEL/LIU PWB differs. The FAX PWB information (soft switch) differs. |
| | | | Remedy | Check the destination of the TEL/LIU PWB. Check the FAX PWB information (soft switch). |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | TEL/LIU PWB trouble |
| | | | Remedy | Replace the TEL/LIU PWB. |
| | | | Note | |

| Main code | Sub code | Title | FAX-BOX incompatibility trouble | |
|-----------|-----------|------------|---------------------------------|---|
| F6 | 97 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | The FAX-BOX PWB is not one for the AR-FX8. (FAX detection) If the FAX-BOX modem controller PWB information (hard detection) is not for the AR-FX8, it is judged as an error. |
| | | | Section | FAX |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Because the FAX-BOX modem controller PWB information (hard detection) is not for the AR-FX8. (The modem controller PWB for the AR-FX5 or the AR-FX6 is used.) |
| | | | Remedy | Check the FAX-BOX modem controller PWB. Replace it with a modem controller PWB for the AR-FX8. |
| | | | Note | |

| Main code | Sub code | Title | Combination error of the FAX-BOX destination information and the machine destination information | |
|-----------|-----------|------------|--|---|
| F6 | 98 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Combination error of the FAX-BOX destination information and the machine destination information When the destination information stored in the FAX-BOX EEPROM is compared with that of the machine, and if the combination is improper, it is judged as an error. |
| | | | Section | FAX |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Because of improper combination between the destination information stored in the EEPROM on the FAX-BOX PWB and that of the machine (set with SIM 26-6). |
| | | | Remedy | Check the destination of the FAX-BOX. Check the machine destination with SIM 26-6. Use a proper combination of the machine and the FAX-BOX. |
| | | | Note | |

| Main code | Sub code | Title | FAX board EEPROM read/write error | |
|-----------|-----------|------------|-----------------------------------|---|
| F7 | 01 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | FAX board EEPROM read/write error ACK from the EEPROM cannot be checked. |
| | | | Section | FAX |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | EEPROM trouble FAX PWB EEPROM access circuit trouble |
| | | | Remedy | Replace the EEPROM. Re-setup the soft SW. |
| | | | Note | |

| Main code | Sub code | Title | PRT centro port check error | |
|-----------|-----------|------------|-----------------------------|---|
| F9 | 02 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | PRT centro port check error |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Centro port trouble MFP controll PWB trouble |
| | | | Remedy | Replace the MFP control PWB. |
| | | | Note | |

| Main code | Sub code | Title | Thermistor open/Fusing unit not installed | |
|-----------|--------------------|------------|---|---|
| H2 | 00/ HL1 | Phenomenon | Display | Lamp |
| | 01/ HL2 | | | Message |
| | 02/ HL3 | | Details | Thermistor open (An input voltage of 2.95V or above is detected.) Fusing unit not installed |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Thermistor trouble Control PWB trouble Improper connection of the fusing section connector AC power trouble Fusing unit not installed |
| | | | Remedy | Check the harness and the connector between the thermistor and the control PWB. Use SIM 14 to clear the self diag display. |
| | | | Note | |

| Main code | Sub code | Title | Fusing section high temperature trouble | |
|-----------|----------|----------------------------|--|--|
| H3 | 00/HL1 | Phenomenon | Display | Lamp Message |
| | 01/HL2 | | Details | Fusing section high temperature trouble The fusing temperature exceeds 241.5°C. (An input voltage of 0.35V or less is detected.) When fusing temperature control is started and a temperature of 242°C is detected 3 times continuously in sampling of 300 (450) msec interval. (Except for Japan) |
| | 02/HL3 | | | |
| | | | | |
| | | | Section | Engine |
| | | | Operation mode | |
| | | Note | | |
| | Case 1 | Trouble position/ Cause | Thermistor trouble Control PWB trouble Improper connection of the fusing section connector AC power trouble | |
| | | | Remedy | Use SIM 5-2 to check flashing of the heater lamp. When the lamp flashes normally. <ul style="list-style-type: none">• Check the thermistor and the harness.• Check the thermistor input circuit on the control PWB. When the lamp keeps ON. <ul style="list-style-type: none">• Check the AC PWB and the lamp control circuit on the control PWB. Use SIM 14 to cancel the trouble |
| | | | | Note |

| Main code | Sub code | Title | Fusing section low temperature trouble | | |
|-----------|------------------|------------|--|--|--------|
| H4 | 00/HL1 | Phenomenon | Display | Lamp | |
| | 01/HL2 02/HL3 | | Message | | |
| | | | Details | Fusing section low temperature trouble The set temperature is not reached within the specified time (normally 4 min) after turning on the power relay. The heater lamp does not turn off in 4 min after starting warming up. After completion of warming up, when the temperature below (*) is detected 5 times continuously during sampling in the interval of 300(450) msec (EX JAPAN): * H4-02/HL3: 80°C (Fixed level) This temperature is -50°C lower than the temperature control level of H4-00/HL1, H4-01/HL2. | |
| | | | | Section | Engine |
| | Operation mode | | | | |
| | Note | | | | |
| | Case 1 | | Trouble position/ Cause | Thermistor trouble Heater lamp trouble Control PWB trouble Thermostat trouble AC power trouble Interlock switch | |
| | | Remedy | Use SIM 5-2 to check flashing of the heater lamp. When the lamp flashes normally. <ul style="list-style-type: none">• Check the thermistor and the harness.• Check the thermistor input circuit on the control PWB. When the lamp does not turn on. <ul style="list-style-type: none">• Check for disconnection of the heater lamp or the thermostat.• Check the interlock switch.• Check the AC PWB and the lamp control circuit on the control PWB. Use SIM 14 to cancel the trouble | | |
| | | | Note | | |

| Main code | Sub code | Title | | 5-time continuous POD not-reached JAM detection | |
|-----------|----------|------------|----------------------------|--|---|
| H5 | 01 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | 5-time continuous POD not-reached JAM detection When POD1 not-reached jam is detected 5 times continuously. POD1 jam counter is backed up and used in a print job after turning on the power. The counter is cleared when POD1 jam does not occur in a job or when the trouble is canceled. | |
| | | | Section | Engine | |
| | | | Operation mode | | |
| | | | Note | | |
| | | | Case 1 | Trouble position/ Cause | The fusing jam is not canceled completely. (Jam paper remains.) |
| | | | | Remedy | Check for jam paper in the fusing section. (Winding, etc.) |
| | | | Case 2 | Trouble position/ Cause | POD1 sensor trouble, or harness connection trouble |
| | | | | Remedy | Check the PODC1 sensor harness and installation of the fusing unit. |
| | | Case 3 | Trouble position/ Cause | Fusing unit installation trouble | |
| | | | Remedy | Use SIM 14 to cancel the trouble | |

| Main code | Sub code | Title | | Scanner feed trouble | |
|-----------|----------|------------|----------------|--|---|
| L1 | 00 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | Scanner feed trouble Scanner feed is not completed within the specified time. When MHP Soft is not detected within 2 sec after shifting the mirror base unit in the feeding direction. | |
| | | | Section | Scanner | |
| | | | Operation mode | | |
| | | | Note | | |
| | | | Case 1 | Trouble position/ Cause | Scanner unit trouble The scanner wire is disconnected. |
| | | | | Remedy | Use SIM 1-1 to check scanning operation. |
| | | | Note | | |
| | | | | | |

| Main code | Sub code | Title | | Scanner return trouble | |
|-----------|----------|------------|----------------|---|---|
| L3 | 00 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | Scanner return trouble Scanner return is not completed within the specified time. MHP Son is not detected within 10sec after starting the mirror base unit in the return direction. | |
| | | | Section | Scanner | |
| | | | Operation mode | | |
| | | | Note | | |
| | | | Case 1 | Trouble position/ Cause | Scanner unit trouble The scanner wire is disconnected. |
| | | | | Remedy | Use SIM 1-1 to check scanning operation. |
| | | | Note | | |
| | | | | | |

| Main code | Sub code | Title | | Main motor lock detection | |
|-----------|----------|------------|----------------|--|---|
| L4 | 01 | Phenomenon | Display | Lamp | |
| | | | | Message | |
| | | | Details | Main motor lock detection Three successive trouble signals are detected after 600 msec from starting the main motor. No trouble is detected after 600msec above. | |
| | | | Section | Engine | |
| | | | Operation mode | | |
| | | | Note | | |
| | | | Case 1 | Trouble position/ Cause | Main motor trouble |
| | | | | Remedy | Use SIM 6-1 to check the main motor operation. |
| | | | Note | | |
| | | | Case 2 | Trouble position/ Cause | Improper disconnection of the harness between the PCU PWB and the main motor Control circuit trouble |
| | | | | Remedy | Check the harness and the connector between the PCU PWB and the main motor. |
| | | | Note | | |

| Main code | Sub code | Title | Drum motor lock detection | |
|-----------|----------|------------|----------------------------|--|
| L4 | 02 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Drum motor lock detection The motor lock signal is detected for 1.5sec during rotation of the drum motor. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Drum motor trouble |
| | | | Remedy | Use SIM 6-1 to check the drum motor operation. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Improper connection of the harness between the PCU PWB and the drum motor Control circuit trouble |
| | | | Remedy | Check the harness and the connector of the PCU PWB, and the drum motor. |
| | | | Note | |

| Main code | Sub code | Title | Developing motor lock detection | |
|-----------|----------|------------|---------------------------------|---|
| L4 | 04 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Developing motor lock detection The motor lock signal is detected for 1.5sec during rotation of the developing motor |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Developing motor trouble |
| | | | Remedy | Use SIM 6-1 to check the developing motor operation. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Improper connection of the harness between the PCU PWB and the developing motor Control circuit trouble |
| | | | Remedy | Check the harness and the connector between the PCU PWB and the developing motor. |
| | | | Note | |

| Main code | Sub code | Title | Fusing motor lock detection | |
|-----------|----------|------------|-----------------------------|---|
| L4 | 03 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Fusing motor lock detection Three successive trouble signals are detected after 600 msec from starting the fusing motor. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Fusing motor trouble |
| | | | Remedy | Use SIM 6-1 to check the fusing motor operation. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Improper connection of the harness between the PCU PWB and the fusing motor Control circuit trouble |
| | | | Remedy | Check connection of the harness and the connector between the PCU PWB and the fusing motor. |
| | | | Note | |

| Main code | Sub code | Title | Transfer belt separation motor trouble detection | |
|-----------|----------|------------|--|--|
| L4 | 06 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Transfer belt separation motor trouble detection The transfer belt home position sensor ON/OFF is not detected within the specified time (4 sec) during operation of the transfer belt (separation, contact). |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Transfer belt separation motor trouble |
| | | | Remedy | Use SIM 6-1 to check the transfer belt motor operation. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Improper connection of the harness between the PCU PWB and the transfer belt separation motor. Control circuit trouble |
| | | | Remedy | Check connection of the harness and the connector between the PCU PWB and the fusing motor. |
| | | | Note | |

| Main code | Sub code | Title | Controller fan motor lock detection | |
|-----------|----------|------------|-------------------------------------|--|
| L4 | 30 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Controller fan motor lock detection The motor lock signal is detected during rotation of the controller fan motor. The motor lock signal is detected during rotation of the HDD fan motor. |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Fan motor trouble |
| | | | Remedy | Use SIM 6-2 to check the fan motor operation. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Improper connection of the harness between the controller PWB and the fan motor. Control circuit trouble |
| | | | Remedy | Check the harness and the connector between the controller PWB and the fan motor. |
| | | | Note | |

| Main code | Sub code | Title | Paper discharging fan trouble | |
|-----------|----------|------------|-------------------------------|---|
| L4 | 31 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Paper exit thermistor open or short. When the temperature of 100°C or above (entered value 235) is detected in the paper exit thermistor 3 times or more continuously. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Defective contact of paper exit thermistor harness |
| | | | Remedy | Check connection of the paper exit thermistor harness and the connector. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Fan motor trouble |
| | | | Remedy | Use SIM 6-2 to check the fan motor operation. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | PCU PWB, harness connection between fan and motor trouble PCU circuit trouble Thermistor (TH_EX) trouble |
| | | | Remedy | Check the PCU PWB, the harness between fan and motor, and the connector. |
| | | | Note | |

| Main code | Sub code | Title | Polygon motor lock detection | |
|-----------|----------|------------|------------------------------|---|
| L6 | 10 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Polygon motor lock detection It is judged that the polygon motor lock signal of the LSU is not outputted. The polygon motor lock signal is checked in an interval of 10sec after starting the polygon motor, and it is found that the polygon motor is not rotating normally. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Polygon motor trouble |
| | | | Remedy | Use SIM 61-1 to check the polygon motor operation. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Disconnection or breakage of the LSU connector or the harness in the LSU |
| | | | Remedy | Check connection of the harness and the connector. Replace the LSU. |
| | | | Note | |

| Main code | Sub code | Title | No full wave signal | |
|-----------|----------|------------|----------------------------|---|
| L8 | 01 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | The full wave signal is not detected. |
| | | | Section | Engine |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Disconnection or breakage of the PCU PWB connector or the harness in the power unit |
| | | | Remedy | Check connection of the harness and the connector. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | PCU PWB trouble |
| | | | Remedy | Replace the PCU PWB. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | 12V power source trouble |
| | | | Remedy | Replace the power unit. Replace the controller connection mother board. |
| | | | Note | |

| Main code | Sub code | Title | RIC copy inhibit command receive | |
|-----------|----------|------------|----------------------------------|---|
| PF | 00 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | The copy inhibit command is received from the RIC (host). (By PPC communication standards.) |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Judged by the host. |
| | | | Remedy | Notification to the host |
| | | | Note | |

| Main code | Sub code | Title | FAX battery abnormality | |
|-----------|----------|------------|-------------------------|--|
| U1 | 01 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | FAX battery abnormality FAX backup SRAM battery voltage fall |
| | | | Section | FAX |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Battery life |
| | | | Remedy | Check that the battery voltage is about 2.5V or above. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Battery circuit trouble |
| | | | Remedy | Check the battery circuit. |
| | | | Note | |

| Main code | Sub code | Title | RTC read error (combined use as FAX, on MFP control PWB) | |
|-----------|----------|------------|--|---|
| U1 | 02 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | RTC read error (combined use as FAX, on MFP control PWB) The read value from the RTC on the MFP control PWB is abnormal such as "EE"h. |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |

| Main code | Sub code | Title | RTC read error (combined use as FAX, on MFP control PWB) | |
|-----------|----------|--------|--|---|
| U1 | 02 | Case 1 | Trouble position/ Cause | RTC circuit trouble |
| | | | Remedy | Make the time setup again with the key operation and check that the time advances normally. Check the RTC circuit. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Battery voltage fall |
| | | | Remedy | Check that the battery voltage is about 2.5V or above. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | Battery circuit trouble |
| | | | Remedy | Check the battery circuit. |
| | | | Note | |

| Main code | Sub code | Title | EEPROM read/write error (MFP control) | |
|-----------|----------|------------|---------------------------------------|--|
| U2 | 00 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | EEPROM write error |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | EEPROM trouble |
| | | | Remedy | Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Insertion of EEPROM which is not initialized |
| | | | Remedy | Use SIM 16 to cancel the U2 trouble. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | MFP control PWB EEPROM access circuit trouble |
| | | | Remedy | Replace the MFP control PWB. |
| | | | Note | |

| Main code | Sub code | Title | Counter check sum error (MFP control) | |
|-----------|----------|------------|---------------------------------------|---|
| U2 | 11 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Counter data area check sum error |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | EEPROM trouble |
| | | | Remedy | Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Control circuit runaway due to noises |
| | | | Remedy | Use SIM 16 to cancel the U2 trouble. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | MFP control PWB EEPROM access circuit trouble |
| | | | Remedy | Replace the MFP control PWB. |
| | | | Note | |

| Main code | Sub code | Title | Adjustment value check sum error (MFP control) | |
|-----------|----------|------------|--|---|
| U2 | 12 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Adjustment value data area check sum error |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | EEPROM trouble |
| | | | Remedy | Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Control circuit runaway due to noises |
| | | | Remedy | Use SIM 16 to cancel the U2 trouble. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | MFP control PWB EEPROM access circuit trouble |
| | | | Remedy | Replace the MFP control PWB. |
| | | | Note | |

| Main code | Sub code | Title | SRAM memory check sum error (MFP control) | |
|-----------|----------|------------|---|---|
| U2 | 22 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | MFPC section SRAM memory check sum error SRAM check sum error when turning on the power. (If this error occurs, initialize the one-touch dial and the FAX soft switches.) |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | SRAM trouble |
| | | | Remedy | Initialize the communication management table registered in the SRAM and the FAX soft switch. Since the registered data are deleted, register the data again. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Control circuit runaway due to noises |
| | | | Remedy | Use SIM 16 to cancel the U2 trouble. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | MFP control PWB EEPROM access circuit trouble |
| | | | Remedy | Replace the MFP control PWB. |
| | | | Note | |

| Main code | Sub code | Title | SRAM memory individual data check sum error | |
|-----------|----------|------------|---|--|
| U2 | 23 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Check sum error for every individual data in SRAM of the MFPC section when turning on the power (If this error occurs, initialize the data related to the check sum error. (Communication management table, sender's information, etc.) |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | SRAM trouble |
| | | | Remedy | Automatically initialize the data related to the check sum error by turning OFF/ ON the power. Since the registered data are deleted, register the data again. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Control circuit runaway due to noises |
| | | | Remedy | Use SIM 16 to cancel the U2 trouble. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | MFP control PWB EEPROM access circuit trouble |
| | | | Remedy | Replace the MFP control PWB. |
| | | | Note | |

| Main code | Sub code | Title | HDD section individual data check sum error (MFP control) | |
|-----------|----------|------------|---|--|
| U2 | 50 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Check sum error for every individual data in HDD of the MFPC section when turning on the power (If this error occurs, initialize the data related to the check sum error. (One-touch, group, program, etc.) |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | HDD write/read error |
| | | | Remedy | Automatically initialize the data related to the check sum error by turning OFF/ ON the power. Since the registered data are deleted, register the data again. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | Control circuit runaway due to noises |
| | | | Remedy | Use SIM 16 to cancel the U2 trouble. |
| | | | Note | |
| | | Case 3 | Trouble position/ Cause | MFP control PWB HDD access circuit trouble |
| | | | Remedy | Replace the HDD. Replace the MFP control PWB. |
| | | | Note | |

| Main code | Sub code | Title | | EEPROM red/write error (Scanner) | |
|-----------|----------|------------|----------------------------|---|--|
| U2 | 80 | Phenomenon | | Display | Lamp |
| | | | | Message | |
| | | | | Details | EEPROM red/write error (Scanner) EEPROM communication trouble (NACK detection) Retry 3 times |
| | | | | Section | Scanner |
| | | | | Operation mode | |
| | | | | Note | |
| | | Case 1 | Trouble position/ Cause | EEPROM trouble | |
| | | | Remedy | Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values. | |
| | | | Note | | |
| | | Case 2 | Trouble position/ Cause | Insertion of EEPROM which is not initialized | |
| | | | Remedy | Use SIM 16 to cancel the U2 trouble. | |
| | | | Note | | |
| | | Case 3 | Trouble position/ Cause | Scanner PWB EEPROM access circuit trouble | |
| | | | Remedy | Replace the scanner PWB. | |
| | | | Note | | |

| Main code | Sub code | Title | | Memory check sum error (Scanner) | |
|-----------|----------|------------|----------------------------|---|--|
| U2 | 81 | Phenomenon | | Display | Lamp |
| | | | | Message | |
| | | | | Details | Memory check sum error (Scanner) When counter data sum error is detected. |
| | | | | Section | Scanner |
| | | | | Operation mode | |
| | | | | Note | |
| | | Case 1 | Trouble position/ Cause | EEPROM trouble | |
| | | | Remedy | Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values. | |
| | | | Note | | |

| Main code | Sub code | Title | | Memory check sum error (Scanner) | |
|-----------|----------|--------|--|----------------------------------|---|
| U2 | 81 | Case 2 | | Trouble position/ Cause | Control circuit runaway due to noises |
| | | | | Remedy | Use SIM 16 to cancel the U2 trouble. |
| | | | | Note | |
| | | | | Trouble position/ Cause | Scanner PWB EEPROM access circuit trouble |
| | | Case 3 | | Remedy | Replace the scanner PWB. |
| | | | | Note | |
| | | | | | |

| Main code | Sub code | Title | | EEPROM read/write error (PCU) | |
|-----------|----------|------------|----------------------------|---|---|
| U2 | 90 | Phenomenon | | Display | Lamp |
| | | | | Message | |
| | | | | Details | EEPROM read/write error (PCU) EEPROM communication trouble (NACK detection) Retry 3 times |
| | | | | Section | Engine |
| | | | | Operation mode | |
| | | | | Note | |
| | | Case 1 | Trouble position/ Cause | EEPROM trouble | |
| | | | Remedy | Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values. | |
| | | | Note | | |
| | | Case 2 | Trouble position/ Cause | Insertion of EEPROM which is not initialized | |
| | | | Remedy | Use SIM 16 to cancel the U2 trouble. | |
| | | | Note | | |
| | | Case 3 | Trouble position/ Cause | PCU PWB EEPROM access circuit trouble | |
| | | | Remedy | Replace the PCU PWB. | |
| | | | Note | | |

| Main code | Sub code | Title | | | Memory check sum error (PCU) | |
|-----------|----------|------------|----------------------------|---|------------------------------|---|
| U2 | 91 | Phenomenon | | | Display | Lamp |
| | | | | | | Message |
| | | | | | Details | Memory check sum error (PCU) When POF data/counter data sum error is detected. |
| | | | | | Section | Engine |
| | | | | | Operation mode | |
| | | | | | Note | |
| | | Case 1 | Trouble position/ Cause | EEPROM trouble | | |
| | | | Remedy | Check that the EEPROM is properly installed. In the simulation to prevent against delete of the counter data/ adjustment values, write down the counter/ adjustment values. | | |
| | | | Note | | | |
| | | Case 2 | Trouble position/ Cause | Control circuit runaway due to noises | | |
| | | | Remedy | Use SIM 16 to cancel the U2 trouble. | | |
| | | | Note | | | |
| | | Case 3 | Trouble position/ Cause | PCU PWB EEPROM access circuit trouble | | |
| | | | Remedy | Replace the PCU PWB. | | |
| | | | Note | | | |

| Main code | Sub code | Title | | | SPF tray lift-up trouble | |
|-----------|----------|------------|----------------------------|---|--------------------------|---|
| U5 | 30 | Phenomenon | | | Display | Lamp |
| | | | | | | Message |
| | | | | | Details | SPF tray lift-up trouble Lift-up trouble is detected 5 times continuously. |
| | | | | | Section | Scanner |
| | | | | | Operation mode | |
| | | | | | Note | |
| | | Case 1 | Trouble position/ Cause | STUD/STLD trouble STUD does not turn on within the specified time. STLD does not turn off within the specified time. | | |
| | | | Remedy | Check the harness and the connector of the STUD and STLD. Lift-up trouble unit check | | |
| | | | Note | | | |

| Main code | Sub code | Title | | | SPF tray lift-down trouble | |
|-----------|----------|------------|----------------------------|---|----------------------------|---|
| U5 | 31 | Phenomenon | | | Display | Lamp |
| | | | | | | Message |
| | | | | | Details | SPF tray lift-down trouble STLD does not turn off within the specified time. |
| | | | | | Section | Scanner |
| | | | | | Operation mode | |
| | | | | | Note | |
| | | Case 1 | Trouble position/ Cause | STUD/STLD trouble STUD does not turn on within the specified time. STLD does not turn off within the specified time. | | |
| | | | Remedy | Check the harness and the connector of the STUD and STLD. Lift-up trouble unit check | | |
| | | | Note | | | |

| Main code | Sub code | Title | | | LCC lift motor trouble | |
|-----------|----------|------------|----------------------------|---|------------------------|---|
| U6 | 09 | Phenomenon | | | Display | Lamp |
| | | | | | | Message |
| | | | | | Details | LCC lift motor trouble <ul style="list-style-type: none"> The upper limit sensor does not turn on within 24 sec after the lift motor is on. No rotation sensor signal is detected for 0.2 sec or longer while the lift motor is on. The upper limit switch is on while the lift motor is on. When the trouble occurs 3 time continuously that the upper limit sensor does not turn on. |
| | | | | | Section | LCC |
| | | | | | Operation mode | |
| | | | | | Note | |
| | | Case 1 | Trouble position/ Cause | Sensor trouble LCC control PWB trouble Gear breakage Lift motor trouble | | |
| | | | Remedy | Use SIM to check the sensor detection. Use SIM to check the lift motor operation. Use SIM 15 to cancel the trouble. | | |
| | | | Note | | | |

| Main code | Sub code | Title | LCC communication trouble | |
|-----------|----------|------------|----------------------------|--|
| U6 | 20 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Communication trouble with the LCC. Follows the communication protocol specifications. Communication error, timing abnormality of the communication data and the communication signal line |
| | | | Section | LCC |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Improper connection or disconnection of the connector and the harness Desk control PWB trouble Control PWB (PCU) trouble Malfunction caused by noises |
| | | | Remedy | Canceled by turning ON/OFF the power. Check the connector and the harness in the communication line. |
| | | | Note | |

| Main code | Sub code | Title | LCC transport motor trouble | |
|-----------|----------|------------|-----------------------------|---|
| U6 | 21 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | LCC transport motor trouble The lock detection signal is detected continuously for 1sec after delay of 1sec from start of the motor. |
| | | | Section | LCC |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Motor lock Motor RPM abnormality Overcurrent to the motor Desk control PWB trouble |
| | | | Remedy | Use SIM 4-3 to check the transport motor operation. |
| | | | Note | |

| Main code | Sub code | Title | LCC 24V power abnormality addition | |
|-----------|----------|------------|------------------------------------|---|
| U6 | 22 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | LCC 24V power abnormality addition 24V power is not supplied to the LCC. (the LCC 24V power is not detected for 1 sec or longer after 1 sec from power on) |
| | | | Section | LCC |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Improper connection or disconnection of the connector and the harness |
| | | | Remedy | Check the connector and the harness of the power line. |
| | | | Note | |
| | | Case 2 | Trouble position/ Cause | LCC control PWB trouble Power unit trouble |
| | | | Remedy | Check the 24V power with the power unit and the LCC control PWB. |
| | | | Note | |

| Main code | Sub code | Title | RIC communication trouble | |
|-----------|----------|------------|----------------------------|---|
| U7 | 00 | Phenomenon | Display | Lamp |
| | | | | Message |
| | | | Details | Communication error with RIC (By PPC communication standards) An error in the communication line test after turning on the power or canceling the simulation |
| | | | Section | Controller |
| | | | Operation mode | |
| | | | Note | |
| | | Case 1 | Trouble position/ Cause | Improper connection or disconnection of the connector and the harness RIC control PWB trouble Control PWB (MFP control) trouble Malfunction caused by noises |
| | | | Remedy | Canceled by turning ON/OFF the power. Check the connector and the harness in the communication line. |
| | | | Note | |

[10] ROM VERSION-UP METHOD

1. General

A. Version-up target ROM's

The version-up target ROM's are listed in the table below.

The version-up procedures of the firmware of this machine is performed without disassembling the ROM from the machine. The new program files are collectively written into the ROM's. Some new programs can be written into an optional ROM.

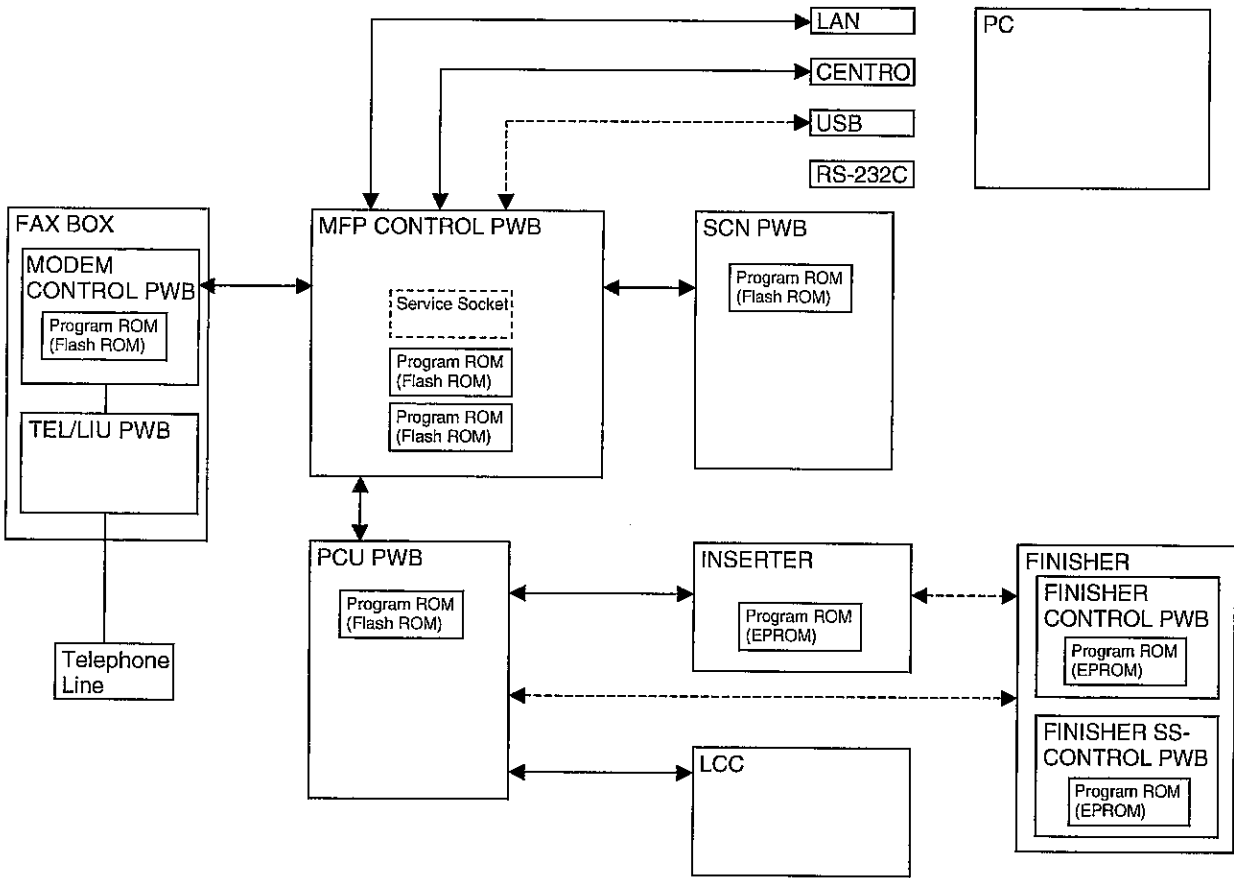
If, however, the above procedure is failed by an accident such as power interruption during the version-up procedure, use the ROM copy socket on the MFP control PWB ROM to make version-up of each ROM individually.

[Kind of ROM]

| Section | Name | Type | Capacity | Replaceable |
|-------------------------|-------------------------|-----------|----------|-------------|
| PCU PWB | PCU ROM | Flash ROM | 8Mbit | Replaceable |
| SCN PWB | SCN ROM | Flash ROM | 8Mbit | Replaceable |
| MFP CONTROL PWB | BOOT ROM | Flash ROM | 32Mbit | Replaceable |
| | MAIN ROM | Flash ROM | 32Mbit | Replaceable |
| FAX MODEM CONTROL PWB | FAX ROM | Flash ROM | 8Mbit | Replaceable |
| FINISHER CONTROL PWB | Finisher Control ROM | EPROM | — | Replaceable |
| FINISHER SS-CONTROL PWB | Finisher SS-Control ROM | EPROM | — | Replaceable |
| INSERTER CONTROL PWB | Inserter Control ROM | EPROM | — | Replaceable |

* All the Flash ROM's can be rewritten. (LAN, Centro)

[Block diagram]



B. ROM version-up is required in the following cases:

- ROM version-up is required in the following cases:
- 1) When improvement of performances is required.
 - 2) When installing a new spare part ROM for repair to the machine.
 - 3) When installing a new spare part PWB unit for repair with the ROM installed.
 - 4) When there is a trouble in the ROM program and it must be repaired.

2. Precautions

A. Relationship between each ROM and version-up

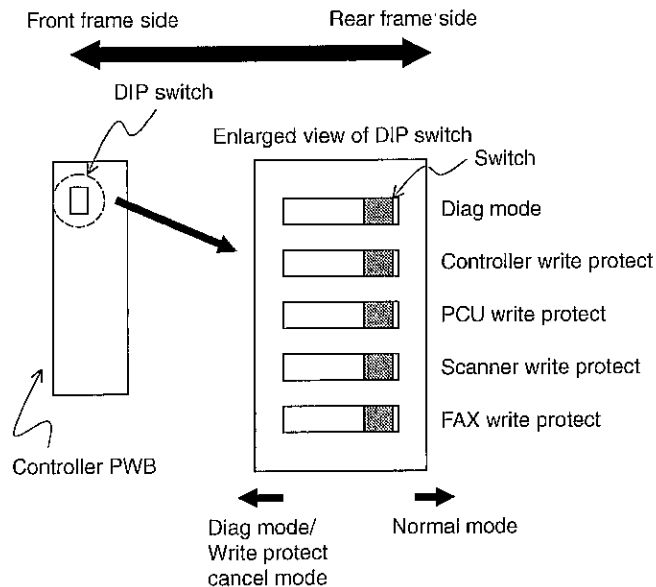
When performing ROM version-up, be sure to check the combination with the version of ROM installed in the other PWB's including optional ones.

Some combinations of ROM versions may not operate the machine properly.

3. Necessary items for Flash ROM version-up

- * A machine with ROM to be operated
- * A spare PCU PWB ROM, an MFP control PWB ROM (Boot, Program), a scanner control PWB ROM (Each of which is provided with the program to allow operations.) (Used when writing the program files into the ROM is failed.)
- * A PC operating on MS-DOS, with either of a USB, Ethernet, or parallel port.
- * USB cable, Ethernet cable, or parallel I/F cable (for connection of PC and MFP control PWB)
- * FCOPY.EXE file (Parallel I/F, file transfer tool)
- * File2PRN.exe file (A file transfer tool for parallel, Ethernet, and USB protocols)
- * Version-up program (compression) file

(The SFU file for writing a program to each ROM of the PCU PWB, the MFP control PWB (boot, program), and the scanner control PWB, or the SFU file for writing all the programs collectively.)



4. Flash ROM version-up method

A. MFP control PWB ROM DIP switch selection and Flash ROM slot

To make version-up of the ROM, the DIP set on the MFP control PWB on the side of the machine must be properly selected.

- * When writing the program into each ROM (PCU, FAX, and scanner control PWB ROM) of each PWB individually by using an empty slot for ROM copy on the MFP control PWB ROM, the protect switch and the diag mode switch of the MFP control PWB ROM are switched over.

(MFP control PWB ROM slot)

The MFP control PWB ROM is provided with three Flash ROM slots: CN4, CN5, and CN6.

The boot ROM is installed to CN4, and the main ROM is installed to CN5. CN6 is an empty slot.

Use this empty slot of the MFP control PWB, CN6, to copy the ROM program.

- * When writing the program files collectively without disassembling the ROM's from the PWB's, and when writing the program files into an optional ROM:

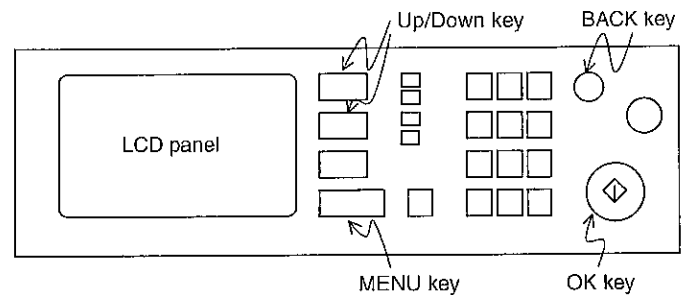
The protect switch and the diag mode switch of the target PWB ROM of writing program files are switched.

B. Operation panel

B. Operation panel

When entering the diag mode to write into ROM, some keys on the operation panel and the LED panel are used. Necessary information including menu items and messages is displayed on the LCD panel.

[START] key is used as [OK] key, [DOCUMENT FILING] key and [FAX/IMAGE SEND] key as up/down select keys, [JOB STATUS] key as [MENU] key, and [CLEAR] key as [BACK] key.



(NOTE)

- 1) When performing version-up of the firmware by using the file transfer tool (File1PRN), the printer driver of the target model must be installed in advance.
- 2) When performing version-up of the firmware by using the USB I/F, take note of the following items.

Since the port for the file transfer tool (File2PRN) differs from the port for the print mode, if the port for the print mode has been already made, be careful not to mistake them. If the USB port for the print mode has been made, it is advisable to delete it in order to avoid confusion.

(Making procedures of the port for the file transfer tool (File2PRN) in the USB I/F mode)

When performing version-up of the firmware by using the USB I/F, perform the following procedures to make the port in advance.

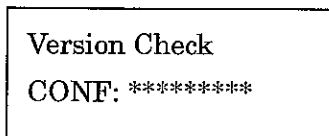
- 1) Install the printer driver of the target model.
In this case, set the port to other than the USB mode.
- 2) Set the DIP switch to the Flash ROM version-up mode, and turn on the power.
- 3) Connect the PC and the main unit with a USB cable.
- 4) The PC detects the new hardware by Plug & Play function.
- 5) The driver of SHARP AR-M620N is automatically installed. (The model name is indicated as SHARP AR-M620N, regardless of the actual model name.)

C. Version-up procedure 1

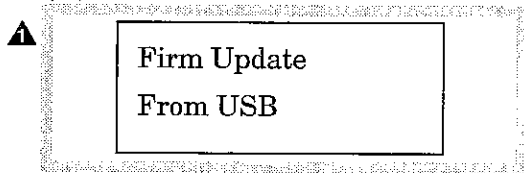
When writing the program files collectively without disassembling the ROM's from the PWB's, and when writing the program files into an optional ROM:

Note: The PCU ROM, the FAX ROM, and the scanner control PWB ROM must be provided with the program to operate. An empty ROM cannot be used.

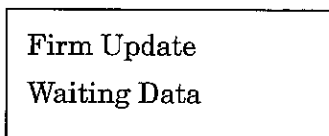
- 1) Set the DIP switch to the diag mode, and set the write protect DIP switch of the target ROM to CANCEL side.
When writing the program data into all the ROM's collectively, set all the protect switches to CANCEL side.
- 2) Connect the PC and the MFP control PWB with a I/F cable.
- 3) Turn on the PC and the machine.
- 4) Copy the file transfer tool and ROM program file into the PC.
(When writing with the file transfer tool fcopy.exe via parallel I/F)
Copy the collective ROM programming file and fcopy.exe into the same folder of the PC. (When writing with the file transfer tool File2PRN.exe)
Copy the collective ROM programming file and the file transfer tool File2PRN.exe into the folder you desire on the PC.
- 5) The following display is shown after a while from starting the machine.



- 6) Press MENU key several time to select an I/F to use from USB, Ethernet, and parallel protocols.
(Example)



- 7) Press OK key to display the following menu.



- 8) Transfer the program data from PC to the machine via either of USB, Ethernet, or parallel protocol.

- 8A) When transferring with the file transfer tool fcopy.exe via parallel I/F
Boot MS-DOS from the PC. Use the FCOPY program to transfer the ROM program data from the PC to the main unit.

(Procedure)

Type in Fcopy followed by a file name of the ROM program data, then press Enter key.

Fcopy xxx.sfu Enter

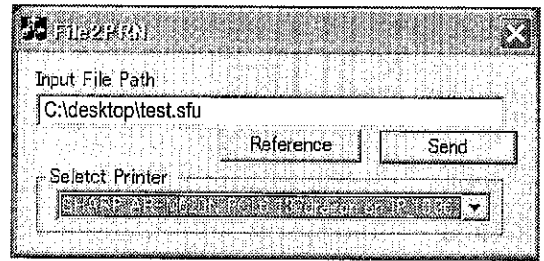
↑

ROM program data file

- 8B) When transferring with the file transfer tool File2PRN.exe
Start File2PRN.exe on the PC. Use this program to transfer the ROM program data from the PC to the main unit.

(Procedure)

Start File2PRN.exe.



Click Reference button and select a ROM program to transfer.

Select the target machine's port form Select Printer pull down list.

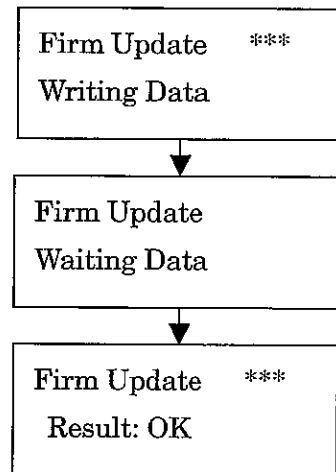
Click Send button.

The LED blinks and the LCD displays appropriate information as operation proceeds.

Note: When version-up of each ROM of the scanner control PWB is performed, the backlight of the display is turned off. This does not mean a trouble. Wait for a while.

- 9) When "Result: OK" is displayed after a few minutes, press Up/Down keys to check that there is no display of "Result: NG."

Note: When writing the program file data collectively to the machine without the FAX unit installed, "Result : NG" is displayed only to the FAX. This can be neglected.



- 10) Turn off the machine, and set the DIP switch to the original position. (Normal start side)

- 11) Turn on the machine, and use SIM 22-5 to check that each ROM version is properly upgraded.

D. Version-up procedure 2

When writing the program into each ROM of the PCU PWB, the FAX PWB, and the scanner control PWB individually by using an empty slot for ROM copy on the MFP control PWB ROM:

Note: The program write target ROM installed to the empty slot for ROM copy on the MFP control PWB ROM may be empty. (No need to have the program data in it. The empty ROM can be used.)

- 1) Set the DIP switch to the diag mode, and set the write protect switch of the MFP control PWB ROM to CANCEL side.
- 2) Install the write target ROM to the empty slot for ROM copy on the MFP control PWB ROM.
- 3) Connect the PC and the MFP control PWB with a I/F cable.
- 4) Turn on the PC and the machine.
- 5) Copy the file transfer tool and ROM program file into the PC.
(When writing with the file transfer tool fcopy.exe via parallel I/F)
Copy the collective ROM programming file and fcopy.exe into the same folder of the PC. (When writing with the file transfer tool File2PRN.exe)
Copy the collective ROM programming file and the file transfer tool File2PRN.exe into the folder you desire on the PC.

- 6) The following display is indicated after a while.

Version Check
CONF: *****

- 7) Press MENU key a few times to show the following display.



CN Update
From USB

- 8) Press OK key to show the following display.

CN Update
Waiting Data

- 9) Transfer the program data from PC to the machine via either of USB, Ethernet, or parallel protocol.

- 9A) When transferring with the file transfer tool fcopy.exe via parallel I/F

Boot MS-DOS from the PC. Use the FCOPY program to transfer the ROM program data from the PC to the main unit.

(Procedure)

Type in Fcopy followed by a file name of the ROM program data, then press Enter key.

Fcopy xxx.sfu Enter



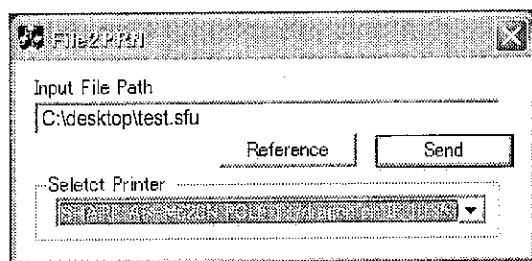
ROM program data file

- 9B) When transferring with the file transfer tool File2PRN.exe

Start File2PRN.exe on the PC. Use this program to transfer the ROM program data from the PC to the main unit.

(Procedure)

Start File2PRN.exe.



Click Reference button and select a ROM program to transfer.

Select the target machine's port from Select Printer pull down list.

Click Send button.

The LED blinks and the LCD displays appropriate information as operation proceeds.

- 10) The LED stops flashing in a few minutes, and "Writing: OK" is displayed.

CN Update
Receiving Data



CN Update *****
Writing Data

- 11) Press OK key, and the following display is shown.

CN Update *****-> CN5
Writing OK ?

- 12) "CN5" and the selection menu of slot numbers is displayed. Select "CN6" to which the target ROM is inserted to with Up/Down keys, and press OK key.

- 13) The LED flashes and the display is changed in the following sequence.

When "Result: OK" is displayed in a few minutes, press Up/Down keys to check that there is no display of "Result: NG."

CN Update *****-> CN5
Writing Data



CN Update *****-> CN5
Result : OK

- 14) Turn off the machine, and set the DIP switch to the original state (normal boot side).

- 15) Remove the ROM from the empty slot CN6 for ROM copy on the MFP control PWB ROM.

- 16) Install the ROM with the revised version to the PWB.

- 17) Turn on the machine, and use SIM 22-5 to check that the ROM version is normally upgraded.

(NOTE)

Precautions on transferring a ROM program data with the file transfer tool File2PRN

For successful transferring a ROM program data with the file transfer tool File2PRN, the following conditions should be met:

- When transferring a ROM program data with the file transfer tool File2PRN, the destination machine must be configured as a printer.
- The PC must have an appropriate printer driver installed and configured with an I/F port to use.

E. Countermeasures against "Result: NG"

Factors of "Result: NG"

The following cases may be factors of "Result: NG."

- * The DIP switch for write protect is not set properly.
- * The FAX cable is not connected. (NG for FAX)
- * ROM defect (Very rare case)

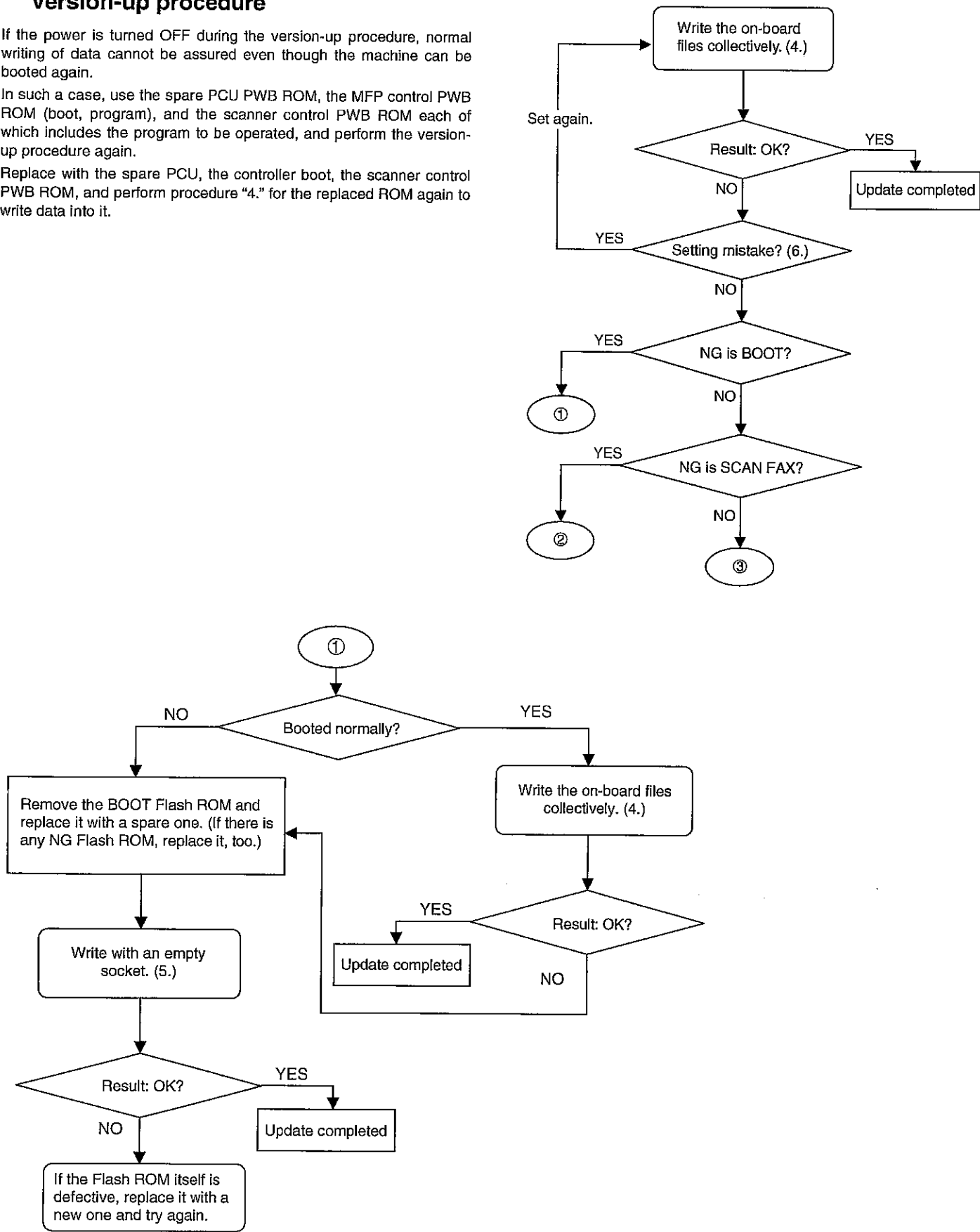
5. Turning OFF the power during the version-up procedure

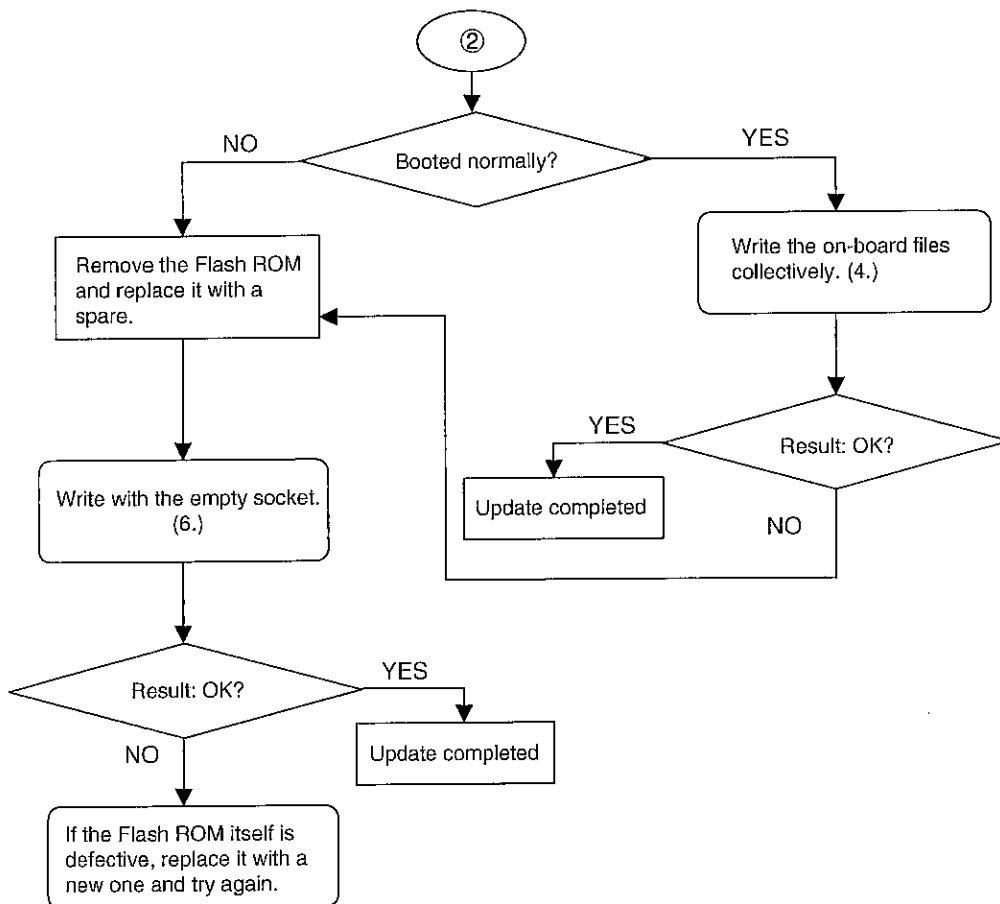
If the power is turned OFF during the version-up procedure, normal writing of data cannot be assured even though the machine can be booted again.

In such a case, use the spare PCU PWB ROM, the MFP control PWB ROM (boot, program), and the scanner control PWB ROM each of which includes the program to be operated, and perform the version-up procedure again.

Replace with the spare PCU, the controller boot, the scanner control PWB ROM, and perform procedure "4." for the replaced ROM again to write data into it.

6. Version-up procedure flowchart





<Reference> How to use Fcopy.exe program

When transferring ROM program files by using Fcopy.exe program, copy Fcopy.exe program and the ROM program files in the same folder and boot MS-DOS. Then, open the above folder on MS-DOS, and type "Fcopy file name" and transfer is performed. In the example below, the SFU file is placed in C:\ROM folder, and it is transferred.

```

C:\ROM>dir
volume in drive C has no label
volume Serial Number is 000X-00X0
Directory of C:\ROM

<DIR>          10-28-03 13:24p
<DIR>          10-28-03 13:24p
FCOPY  EXE      16,771  10-28-03 14:15p  fcopy.exe
TEST   SFU      1,768,960 10-28-03 15:26p  test.sfu
P021100  NOT     648,760 10-28-03 15:26p  P021100.not
P02101-2 SFU     155,648 10-28-03 16:10p  mt1b0108.sfu
P021100 SFU     106,840 10-28-03 17:12p  P021100.sfu
MT1B01-1 SFU     155,648 10-28-03 18:11p  mt1b0108.suf.suf
6 files(s)      66 bytes
2 dir(s)        2,240.75 MB free

C:\ROM>fcopy test.sfu
Outputting test.sfu to LPT1
OK completed
  
```

[11] MAINTENANCE LIST

1. Maintenance list

X: Check (Clean, replace, or adjust as necessary.) O: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| | | AR-M550N/U (PM: 250K) AR-M620N/U, AR-M700N/U (PM: 300K) | When calling | 250K 300K | 500K 600K | 750K 900K | 1000K 1200K | 1250K 1500K | 1500K 1800K | 1750K 2100K | 2000K 2400K | Remark |
|-------------------------|-----|--|--------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|----------------|---|
| Unit name | No. | Part name | | | | | | | | | | |
| Drum peripheral section | 1 | OPC drum | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 2 | Cleaning blade | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | Toner reception seal | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 4 | Side seal F/R | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 5 | Drum separation pawl | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 6 | Discharge lamp | X | O | O | O | O | O | O | O | O | |
| | 7 | Image density sensor | X | O | O | O | O | O | O | O | O | |
| | 8 | OPC drum marking sensor | X | O | O | O | O | O | O | O | O | |
| | 9 | Sawtooth plate | O | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 10 | Screen grid | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 11 | MC cleaner | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 12 | Side seal R base sheet | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 13 | Cleaning brush | | X | X | X | X | X | X | X | X | |
| Transfer section | 1 | Transfer belt | O | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 2 | Transfer roller | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | Transfer drive gear | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 4 | Transfer cleaning roller | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 5 | Shaft (Conductive grease) | X | X | X | X | X | X | X | X | X | UKOG-0012QSZZ |
| Developing section | 1 | Developer | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | Supply when installing |
| | 2 | DV seal | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | MG holder F/R | O | O | O | O | O | O | O | O | O | |
| | 4 | DV side seal F | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 5 | Toner bottle | | | | | | | | | | Assembly when installing/ Replacement by user when empty |
| | 6 | Toner hopper | O | O | O | O | O | O | O | O | O | |
| Fusing section | 1 | Heat roller | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 2 | Fusing roller (Pressing) | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | Sub heat roller | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 4 | Cleaning sheet | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 5 | Cleaning scraper | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 6 | Heat roller separation pawl | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 7 | Fusing roller (Pressing) separation pawl | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 8 | Thermistor | X | X | X | X | X | X | X | X | X | Paper dust removal is required. |
| | 9 | Heat roller gear (Grease) | | X | X | X | X | X | X | X | X | UKOG-0235FCZZ |
| | 10 | Sub heat roller bearing | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 11 | Paper guides | O | O | O | O | O | O | O | O | O | |
| | 12 | Shaft (Grease) | | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | UKOG-0235FCZZ |
| | 13 | Oil roller (AR-M700N/U) | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 14 | Cleaning plate (AR-M700N/U) | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 15 | CL roller bearing (AR-M700N/U) | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| Filters | 1 | Ozone filter | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 2 | DV ozone filter | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | Toner filter | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| Paper feed section | 1 | Paper pickup roller | X | X | X | X | X | X | X | X | X | (Note 1) |
| | 2 | Paper feed roller | X | X | X | X | X | X | X | X | X | (Note 1) |
| | 3 | Separation roller | X | X | X | X | X | X | X | X | X | (Note 1) |
| | 4 | Torque limiter | X | X | X | X | X | X | X | X | X | (Note 1) |
| | 5 | Shaft (Conductive grease) | X | X | X | X | X | X | X | X | X | UKOG-0012QSZZ |

| | | AR-M550N/U (PM: 250K) | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|---|-----|-----------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|---------------|
| | | AR-M620N/U, AR-M700N/U (PM: 300K) | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Unit name | No. | Part name | | | | | | | | | | |
| Transport section/ paper exit reverse section/ duplex section | 1 | PS follower roller | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | UKOG-0012QSZZ |
| | 2 | Transport rollers | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 3 | Transport paper guides | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 4 | Discharge brush | × | × | × | × | × | × | × | × | × | |
| | 5 | Shaft (Conductive grease) | × | × | × | × | × | × | × | × | × | |
| | 6 | Paper dust cleaner | ○ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 7 | Sensors | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| Drive section | 1 | Gear (Grease) | × | × | × | × | × | × | × | × | × | UKOG-0307FCZZ |
| | 2 | Gear (Grease) | × | × | × | × | × | × | × | × | × | UKOG-0299FCZZ |
| | 3 | Gear (Grease) | × | × | × | × | × | × | × | × | × | UKOG-0062FCZZ |
| | 4 | Gear (Grease) | × | × | × | × | × | × | × | × | × | UKOG-0235FCZZ |
| | 5 | Gear (Conductive grease) | × | × | × | × | × | × | × | × | × | UKOG-0012QSZZ |
| | 6 | Belts | | × | × | × | × | × | × | × | × | |
| Image-related sections | 1 | | × | × | × | × | × | × | × | × | × | |

(Document scan section)

| | | AR-M550N/U (PM: 250K) | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|--------------------|----------------------------------|-----------------------------------|-----------------------------|------|------|------|-------|-------|-------|-------|-------|---------------|
| | | AR-M620N/U, AR-M700N/U (PM: 300K) | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Unit name | No. | Part name | | | | | | | | | | |
| Optical section | 1 | Mirror, lens, reflector, sensors | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 2 | Table glass/ Dust-proof glass/ OC | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 3 | White reference glass | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 4 | Rails | | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | |
| | 5 | Drive belt, drive wire, pulley | | × | × | × | × | × | × | × | × | |
| SPF | Paper feed/ Transport section | 1 | Paper feed roller | × | × | × | × | × | × | × | × | (Note 1) |
| | | 2 | Pickup roller | × | × | × | × | × | × | × | × | (Note 1) |
| | | 3 | Separation roller | × | × | × | × | × | × | × | × | (Note 1) |
| | | 4 | No. 1 resist roller (Drive) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | 5 | Torque limiter | | × | × | × | × | × | × | × | (Note 1) |
| | | 6 | Transport roller 1 (Drive) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | 7 | Transport roller 2 (Drive) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | 8 | Exposure section (CIS unit) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| Paper exit section | 9 | No. 2 resist roller (Drive) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 10 | Paper exit roller (Drive) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| Drive section | 11 | Gears (Grease) | × | × | × | × | × | × | × | × | × | UKOG-0299FCZZ |
| | 12 | Belts | | × | × | × | × | × | × | × | × | |

(Note 1) Replacement reference: For replacement, refer to each paper feed counter value.

Paper feed tray 1 and 2 : 200K or 1 year

Manual paper feed/paper feed tray 3 and 4 : 100K or 1 year

SPF section : 100K or 1 year

Torque limiter : 800K (However, 400K for manual paper feed section)

(NOTE) Paper feed section roller life

Since each roller life is 100K or 200K, if a certain paper feed unit is intensively used, its life may be expired before the regular maintenance timing.

In actual, however, different sizes of paper are used with different paper feed trays. Therefore, it is quite rare to have to replace one of the rollers before the maintenance timing.

When a certain size of paper is used intensively, it is advisable to set two or more paper feed trays for that paper size as far as possible. This note should be explained to the user.

When servicing, be sure to check the use frequency of each paper feed tray, and replace a roller if necessary.

When cleaning rollers, it is advisable to use wet waste cloth to wipe and clean.

Since the paper feed trays 3 and 4 are used for larger sizes of paper than the paper feed trays 1 and 2, the life times of their rollers are shorter than those of the paper feed rollers 1 and 2.

The degree of wear of the paper pickup roller is greater than that of the paper feed roller, which greater than that of the separation roller.

(Paper pickup roller > paper feed roller > separation roller)

| | | | AR-M550N/U (PM: 250K) | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|----------------------------|---|-----------|---|--------------|------|------|------|-------|-------|-------|-------|-------|---|
| | | | AR-M620N/U, AR-M700N/U (PM: 300K) | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Unit name | No. | Part name | | | | | | | | | | | |
| LCC | Paper feed separation section | 1 | Paper pickup roller /Paper feed rollers | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | (Note 3) |
| | | 2 | Torque limiter | × | × | × | × | × | × | × | × | × | (Note 3) |
| | Transport section | 3 | Transport rollers | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | 4 | Transport paper guides | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Drive section | 5 | Gears | × | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | (Specified position) |
| | | 6 | Belt | | × | × | × | × | × | × | × | × | |
| | Others | 7 | Sensors | × | × | × | × | × | × | × | × | × | |
| Saddle finisher Punch unit | Transport section | 1 | Transport rollers | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | 2 | Transport paper guides | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Drive section | 3 | Gears | × | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | (Specified position) |
| | | 4 | Belts | | × | × | × | × | × | × | × | × | |
| | Staple process section | 5 | Knurling belt | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | (Note 4) |
| | | 6 | Paddle | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | (Note 4) |
| | Others | 7 | Sensors | × | × | × | × | × | × | × | × | × | |
| | | 8 | Discharge brush | × | × | × | × | × | × | × | × | × | |
| | Stapler unit | | | | | | | | | | | | Replacement reference: Replace the unit at 500K staple. |
| | Stitcher unit (Stapler unit for saddle) | | | | | | | | | | | | Replacement reference: Replace the unit at 200K staple. |
| | Punch unit | | | | | | | | | | | | Replacement reference: Replace the unit at 1000K. |
| | Staple cartridge | | | | | | | | | | | | User replacement at every 5000 pcs. |
| | Stitcher staple cartridge (Staple cartridge for saddle) | | | | | | | | | | | | User replacement at every 2000 pcs. |
| Insertor | Paper feed separation section | 1 | Paper pickup roller /Paper feed rollers | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | (Note 5) |
| | | 2 | Torque limiter | × | × | × | × | × | × | × | × | × | (Note 5) |
| | Transport section | 3 | Transport rollers | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | | 4 | Transport paper guides | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Drive section | 5 | Gears | × | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | (Specified position) |
| | | 6 | Belts | | × | × | × | × | × | × | × | × | |
| | Others | 7 | Sensors | × | × | × | × | × | × | × | × | × | |

(Note 3) Replacement reference: For replacement, refer to each paper feed counter value.

Paper feed roller related section: 200K or 1 year

Torque limiter: 800K

(Note 4) Replacement reference: For replacement, refer to the finisher paper exit counter value.

Knurling belt: 1000K

Paddle: 1000K

(Note 5) Replacement reference: For replacement, refer to the insertor paper feed port counter value.

Paper feed roller related section: 150K or 1 year

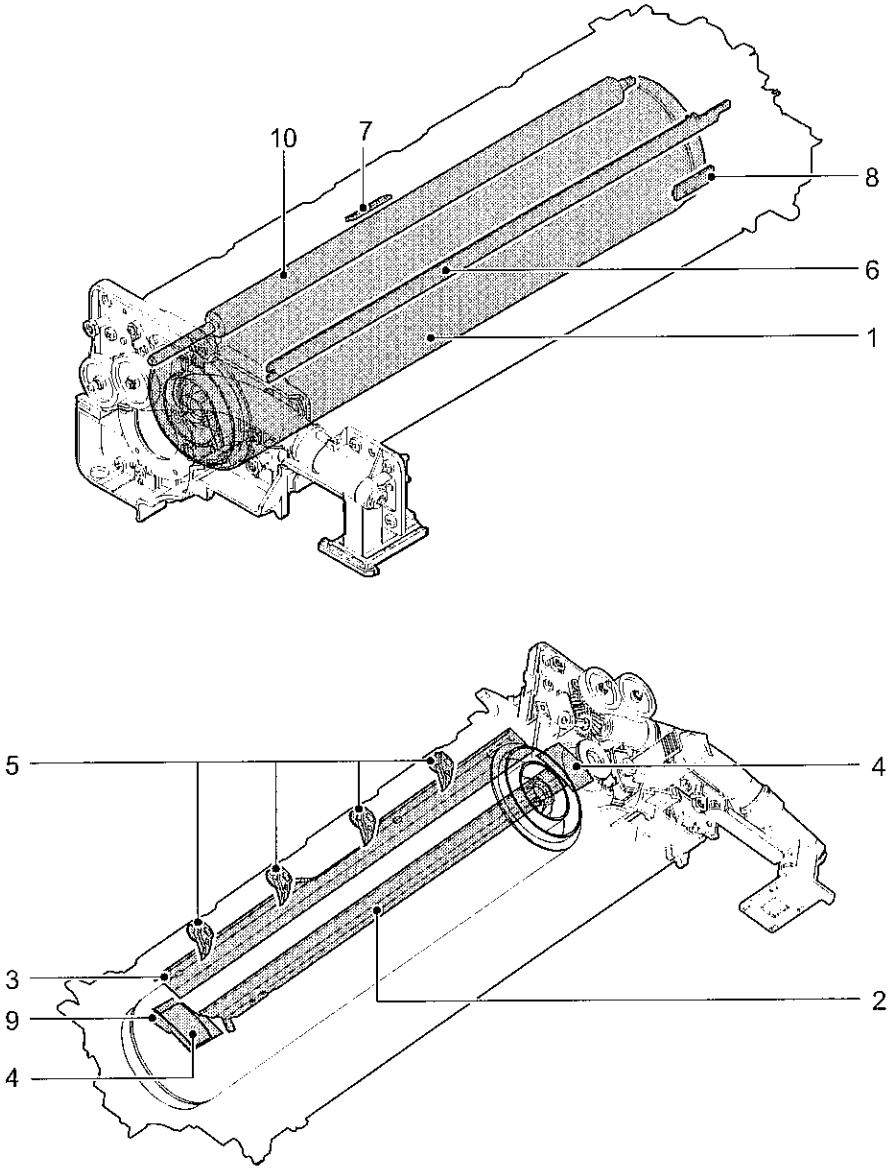
Torque limiter: 400K

2. Details

A. Drum peripheral section

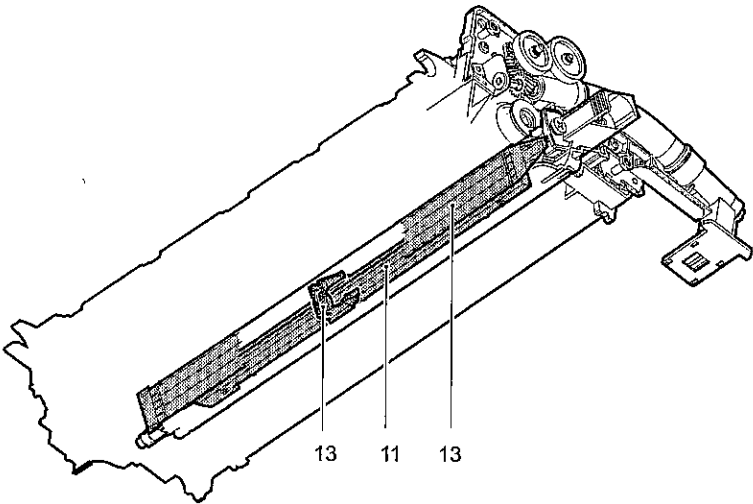
X: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| Unit name | No. | Part name | When calling | AR-M550N/U (PM: 250K) AR-M620N/U, AR-M700N/U (PM: 300K) | | | | | | | | Remark |
|-------------------------|-----|-------------------------|--------------|--|--------------|--------------|----------------|----------------|----------------|----------------|----------------|--------|
| | | | | 250K 300K | 500K 600K | 750K 900K | 1000K 1200K | 1250K 1500K | 1500K 1800K | 1750K 2100K | 2000K 2400K | |
| Drum peripheral section | 1 | OPC drum | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 2 | Cleaning blade | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | Toner reception seal | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 4 | Side seal F/R | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 5 | Drum separation pawl | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 6 | Discharge lamp | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 7 | Image density sensor | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 8 | OPC drum marking sensor | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 9 | Side seal R base sheet | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 10 | Cleaning brush | | × | × | × | × | × | × | × | × | |





| | | | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|-------------------------|-----------|-----------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------|
| | | | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Drum peripheral section | | AR-M550N/U (PM: 250K) | | | | | | | | | | |
| | | AR-M620N/U, AR-M700N/U (PM: 300K) | | | | | | | | | | |
| | Unit name | No. | Part name | | | | | | | | | |
| | | | | | | | | | | | | |
| Drum peripheral section | 11 | Sawtooth plate | ○ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 12 | Screen grid | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 13 | MC cleaner | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |



B. Transfer section

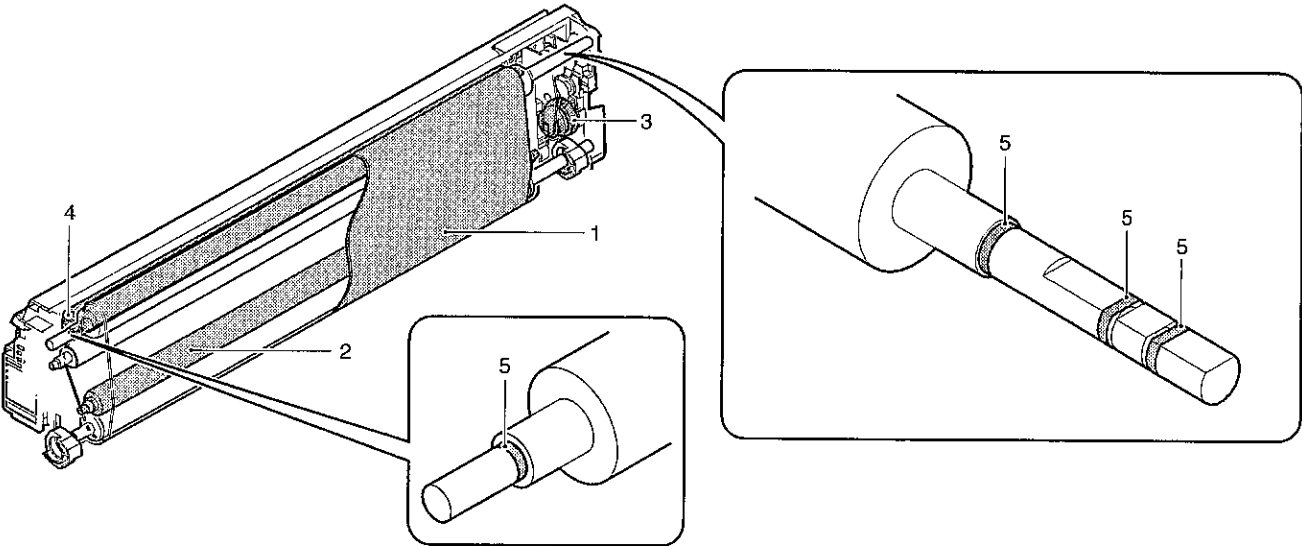
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position



| | | | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|------------------|-----------|-----------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|---------------|
| | | | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Transfer section | | AR-M550N/U (PM: 250K) | | | | | | | | | | |
| | | AR-M620N/U, AR-M700N/U (PM: 300K) | | | | | | | | | | |
| | Unit name | No. | Part name | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Transfer section | 1 | Transfer belt | ○ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 2 | Transfer roller | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | Transfer drive gear | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 4 | Transfer cleaning roller | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 5 | Shaft (Conductive grease) | × | × | × | × | × | × | × | × | × | UKOG-0012QSZZ |



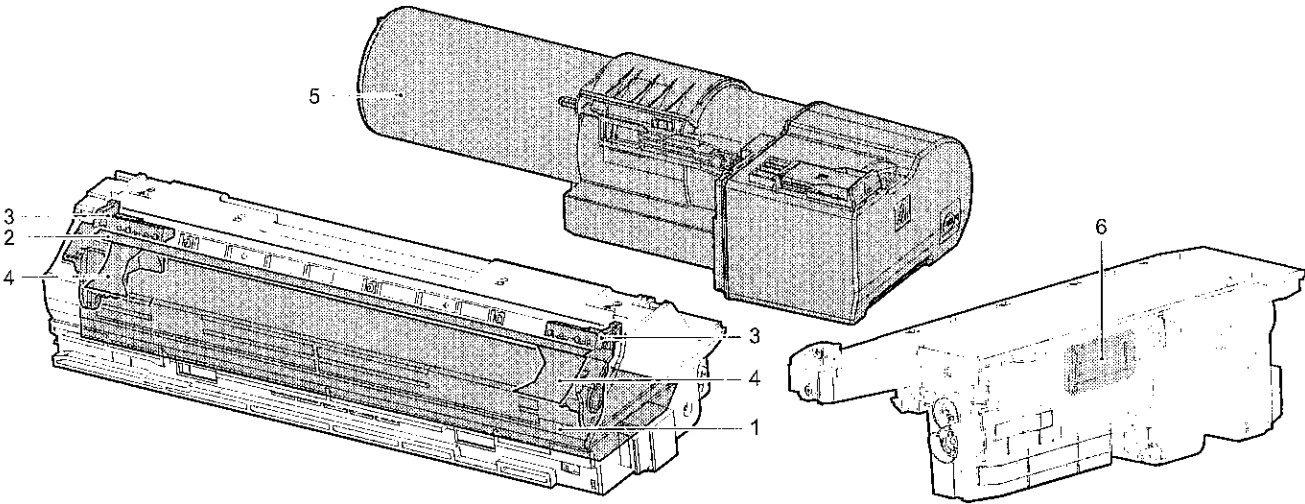
* When cleaning the transfer belt, do not use alcohol, solvent, and water, but use dry waste cloth.



C. Developing section

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| | | AR-M550N/U (PM: 250K) | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|--------------------|-----|-----------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|---|
| | | AR-M620N/U, AR-M700N/U (PM: 300K) | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Unit name | No. | Part name | | | | | | | | | | |
| Developing section | 1 | Developer | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | Supply when installing |
| | 2 | DV seal | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | MG holder F/R | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 4 | DV side seal F/R | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 5 | Toner bottle | | | | | | | | | | Assembly when installing/ Replacement by user when empty |
| | 6 | Toner hopper | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Clean the shutter area. |

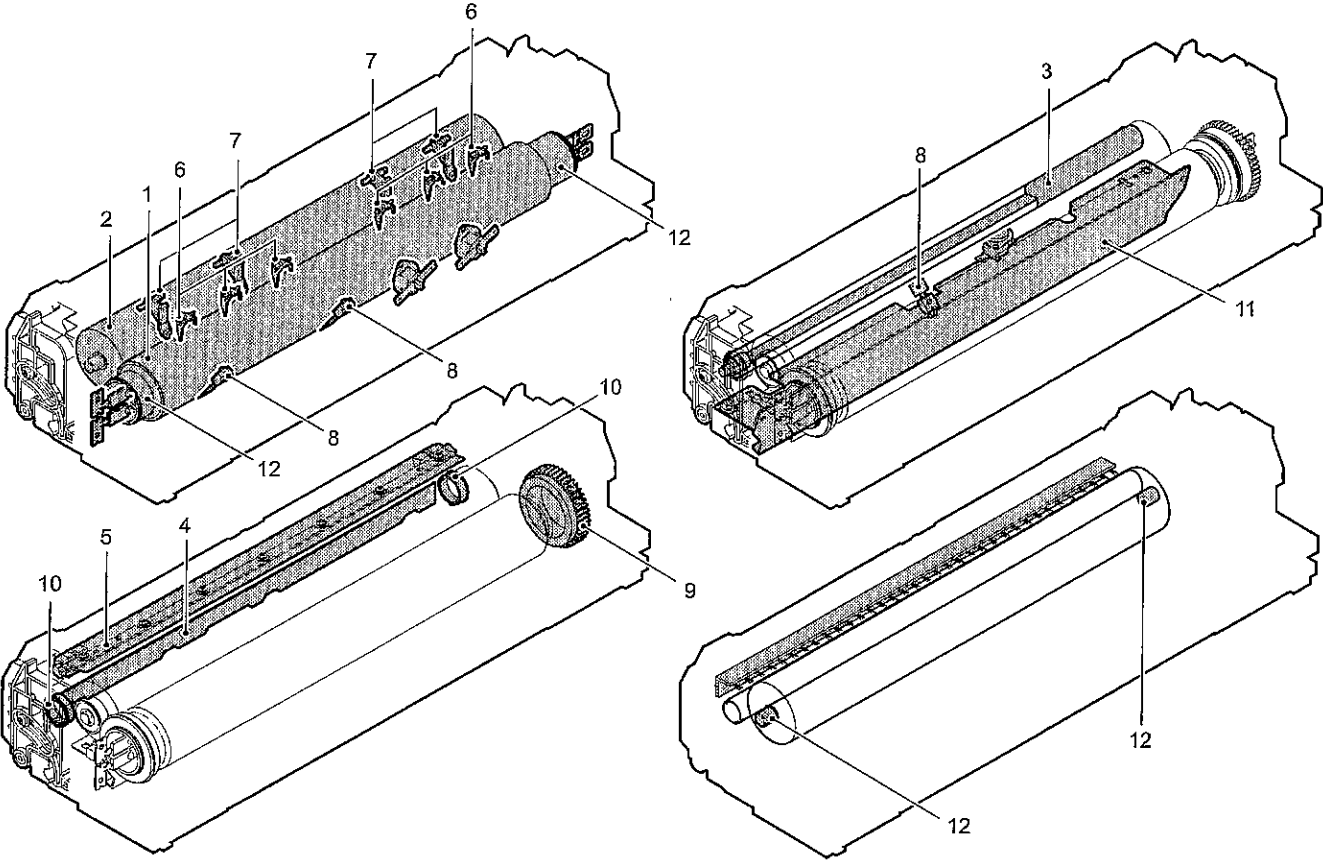


D. Fusing section

■ AR-M550N/U, AR-M620N/U

X: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| | | AR-M550N/U (PM: 250K) | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|----------------|-----|--|-----------------|------|------|------|-------|-------|-------|-------|-------|---------------------------------|
| | | AR-M620N/U (PM: 300K) | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Unit name | No. | Part name | | | | | | | | | | |
| Fusing section | 1 | Heat roller | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 2 | Fusing roller (Pressing) | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | Sub heat roller | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 4 | Cleaning sheet | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 5 | Cleaning scraper | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 6 | Heat roller separation pawl | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 7 | Fusing roller (Pressing) separation pawl | X | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 8 | Thermistor | X | X | X | X | X | X | X | X | X | Paper dust removal is required. |
| | 9 | Heat roller gear (Grease) | | X | X | X | X | X | X | X | X | UKOG-0235FCZZ |
| | 10 | Sub heat roller bearing | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 11 | Paper guides | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 12 | Shaft (Grease) | | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | UKOG-0235FCZZ |

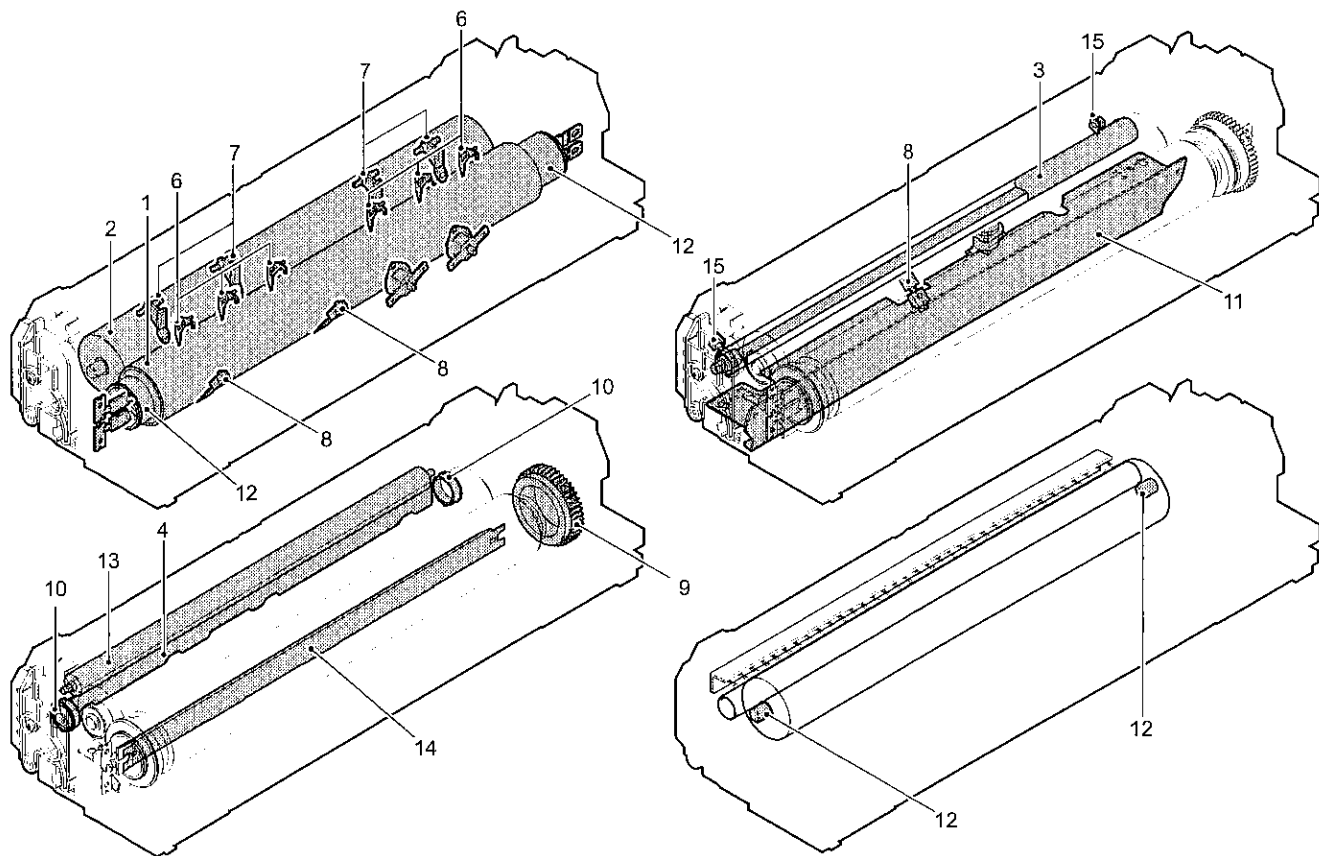


▲ : Feb. 9 2004

■ AR-M700N/U

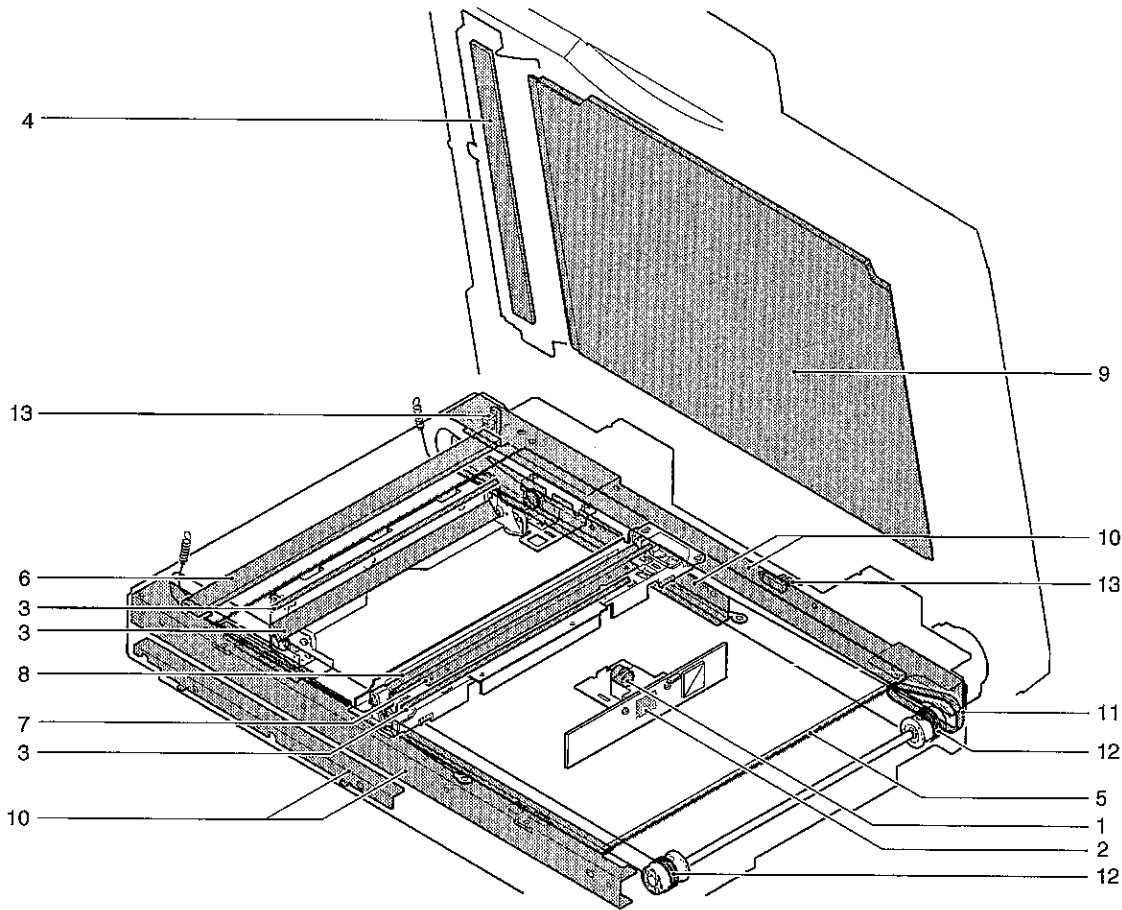
×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| AR-M700N/U (PM: 300K) | | | When calling | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | Remark |
|-----------------------|-----|--|--------------|------|------|------|-------|-------|-------|-------|-------|--|
| Unit name | No. | Part name | | | | | | | | | | |
| Fusing section | 1 | Heat roller | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 2 | Fusing roller (Pressing) | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | Sub heat roller | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 4 | Cleaning sheet | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 6 | Heat roller separation pawl | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 7 | Fusing roller (Pressing) separation pawl | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 8 | Thermistor | × | × | × | × | × | × | × | × | × | Paper dust removal is required. UKOG-0235FCZZ |
| | 9 | Heat roller gear (Grease) | | × | × | × | × | × | × | × | × | |
| | 10 | Sub heat roller bearing | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 11 | Paper guides | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 12 | Shaft (Grease) | | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | UKOG-0235FCZZ |
| | 13 | Oil roller | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 14 | Cleaning plate | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 15 | CL roller bearing | × | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |



E. Scanner section

| | | AR-M550N/U (PM: 250K) | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|-----------------|-----|-----------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|--------|
| | | AR-M620N/U, AR-M700N/U (PM: 300K) | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Unit name | No. | Part name | | | | | | | | | | |
| Scanner section | 1 | Lens | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 2 | CCD | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 3 | Mirror | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 4 | CIS filter glass | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 5 | Table glass | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 6 | Slit glass (SPF scan mode) | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 7 | Reflector | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 8 | Scanner lamp | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 9 | Document mat | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 10 | Rail (Grease) | | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | |
| | 11 | Drive belt | | × | × | × | × | × | × | × | × | |
| | 12 | Drive wire | | × | × | × | × | × | × | × | × | |
| | 13 | Sensors | | × | × | × | × | × | × | × | × | |

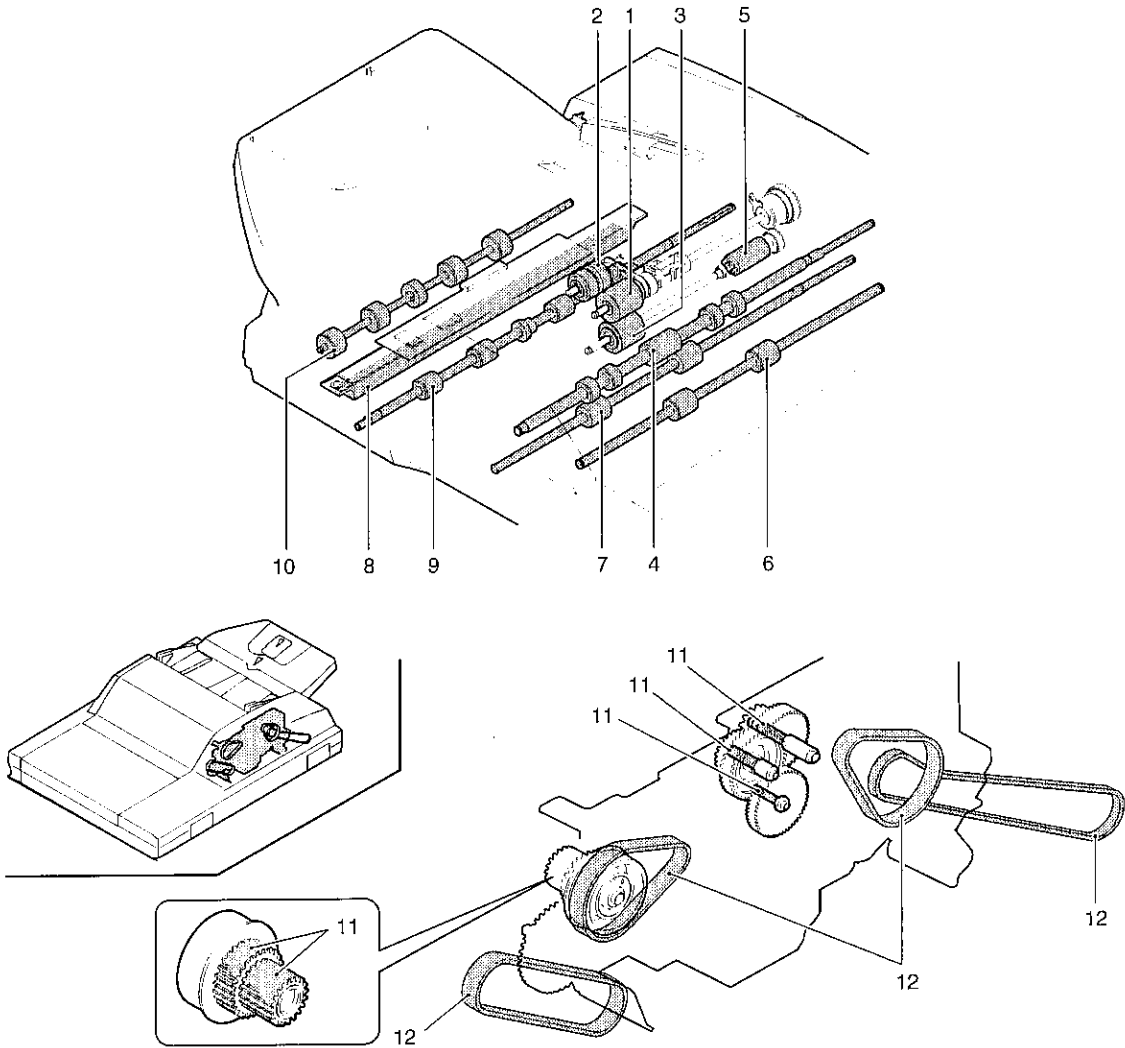


F. SPF section

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| | | AR-M550N/U (PM: 250K) | | When calling | 250K 300K | 500K 600K | 750K 900K | 1000K 1200K | 1250K 1500K | 1500K 1800K | 1750K 2100K | 2000K 2400K | Remark |
|----------------------------------|-----------|-----------------------------------|-----------|--------------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|-------------|---------------|
| | | AR-M620N/U, AR-M700N/U (PM: 300K) | | | | | | | | | | | |
| SPF | Unit name | No. | Part name | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Paper feed/ Transport section | 1 | Paper feed roller | × | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 2 | Pickup roller | × | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 3 | Separation roller | × | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 4 | No. 1 resist roller (Drive) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 5 | Torque limiter | | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 6 | Transport roller 1 (Drive) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 7 | Transport roller 2 (Drive) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 8 | Exposure section (CIS unit) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| Paper exit section | 9 | No. 2 resist roller (Drive) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 10 | Paper exit roller (Drive) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| Drive section | 11 | Gears (Grease) | × | × | × | × | × | × | × | × | × | × | UKOG-0299FCZZ |
| | 12 | Belts | | × | × | × | × | × | × | × | × | × | |

(Note 1) Replacement reference: For replacement, refer to each paper feed counter value.
SPF section : 100K or 1 year

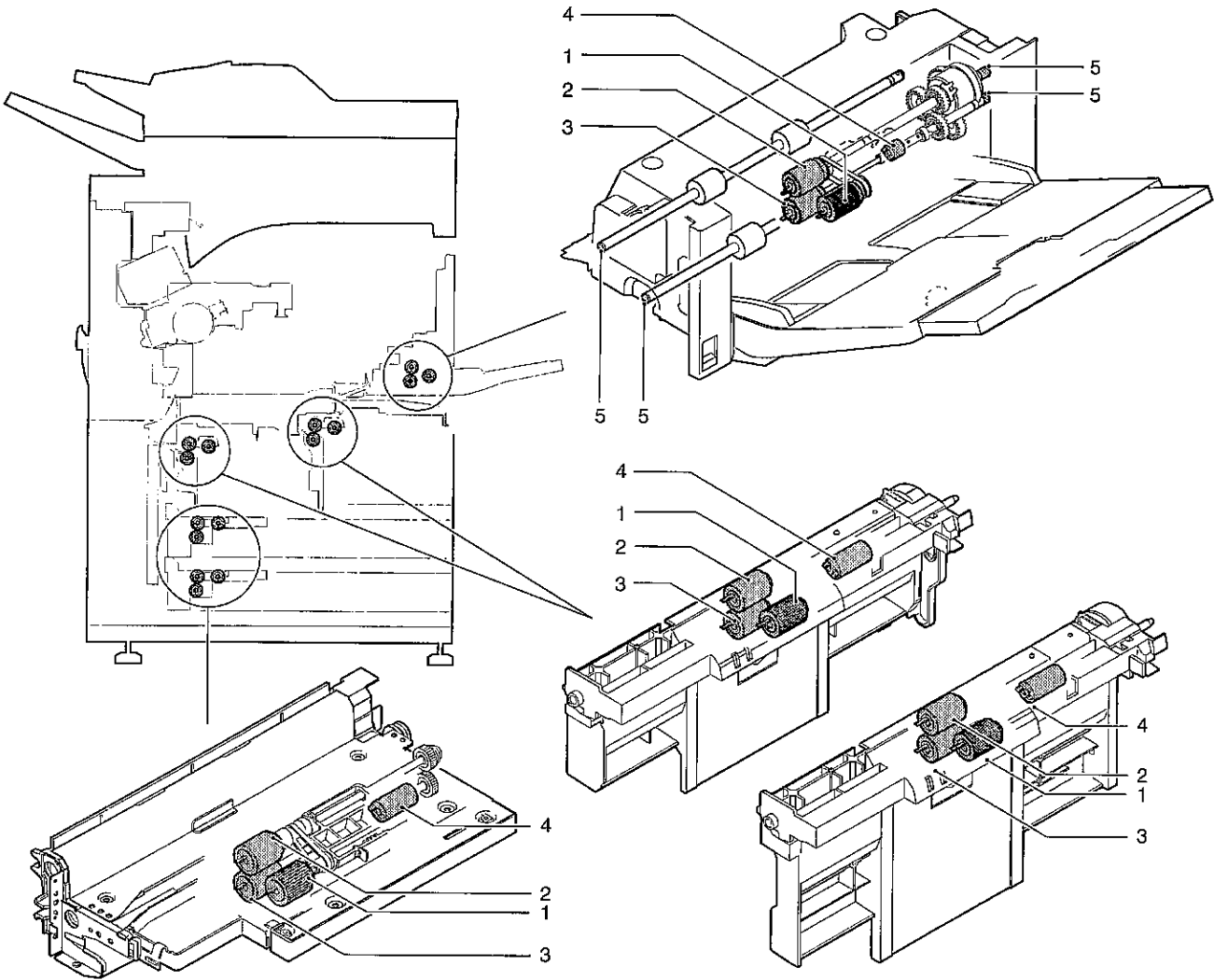


G. Paper feed section

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| Unit name | No. | Part name | When calling | AR-M550N/U (PM: 250K) AR-M620N/U, AR-M700N/U (PM: 300K) | | | | | | | | Remark |
|--------------------|-----|---------------------------|--------------|--|--------------|--------------|----------------|----------------|----------------|----------------|----------------|---------------|
| | | | | 250K 300K | 500K 600K | 750K 900K | 1000K 1200K | 1250K 1500K | 1500K 1800K | 1750K 2100K | 2000K 2400K | |
| Paper feed section | 1 | Paper pickup roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 2 | Paper feed roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 3 | Separation roller | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 4 | Torque limiter | × | × | × | × | × | × | × | × | × | (Note 1) |
| | 5 | Shaft (Conductive grease) | × | × | × | × | × | × | × | × | × | UKOG-0012QSZZ |

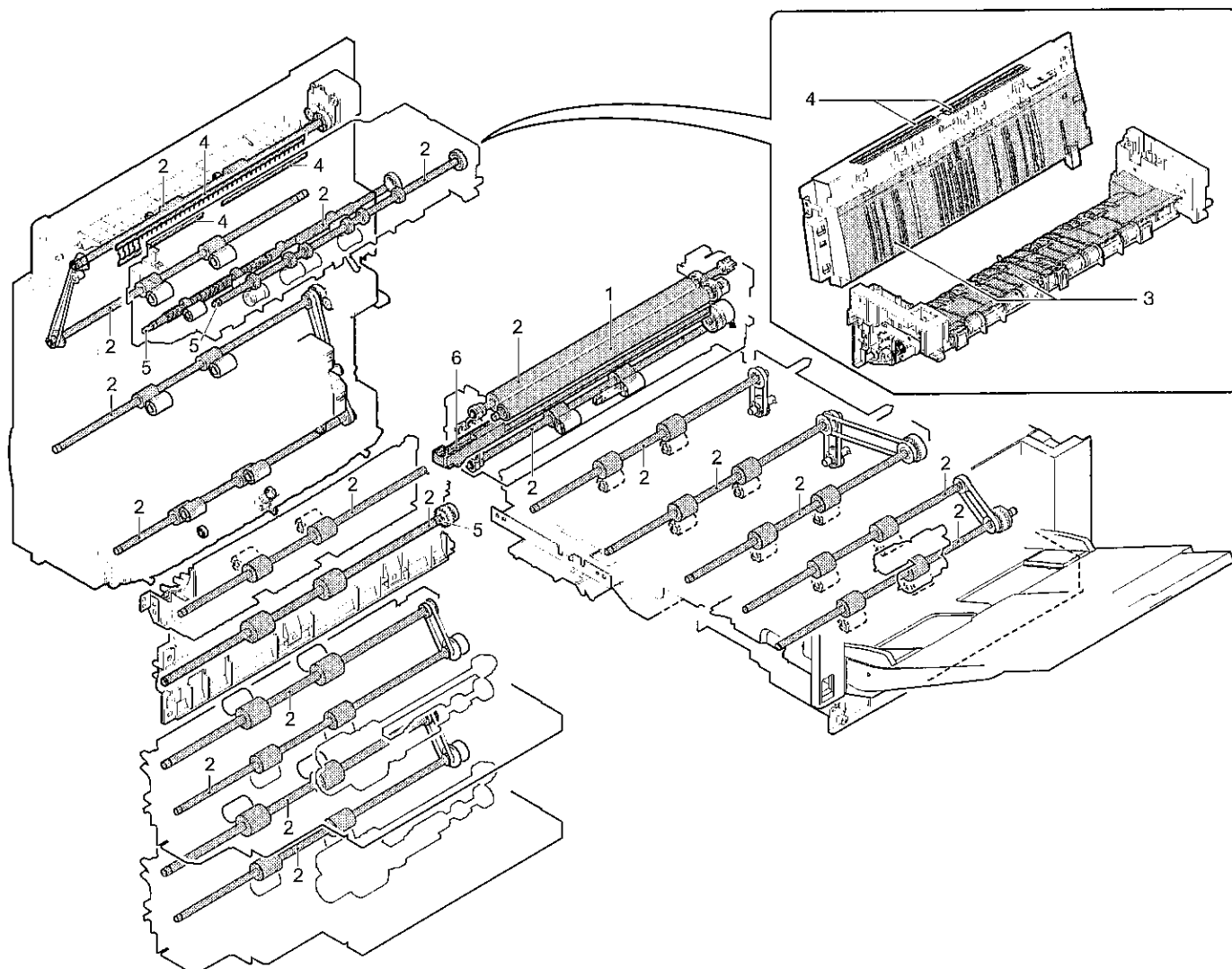
(Note 1) Replacement reference: For replacement, refer to each paper feed counter value.
Paper feed tray 1 and 2 : 200K or 1 year
Manual paper feed/paper feed tray 3 and 4 : 100K or 1 year
SPF section : 100K or 1 year
Torque limiter : 800K (However, 400K for manual paper feed section)



H. Transport section/paper exit reverse section/duplex section

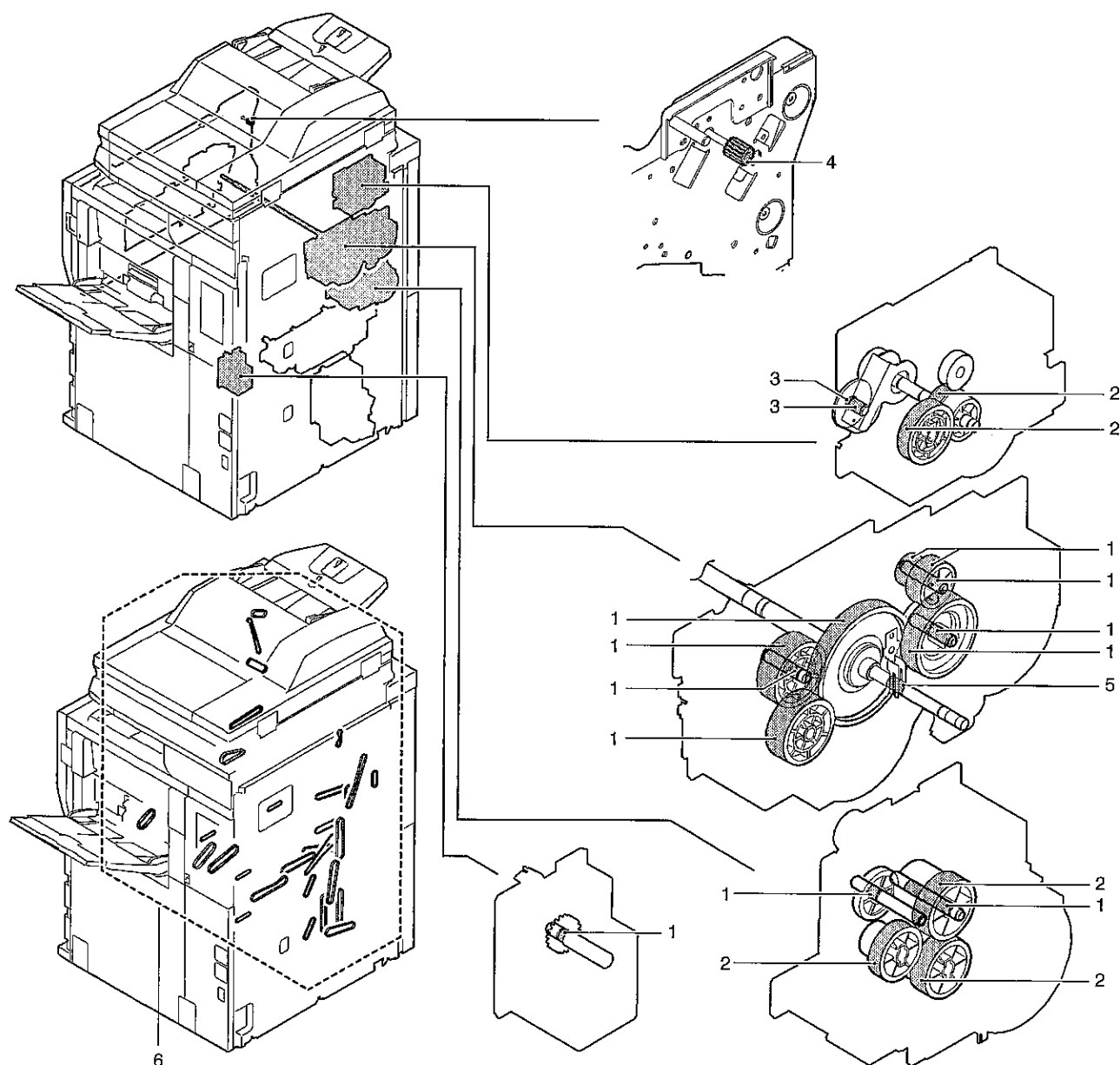
X: Check (Clean, replace, or adjust as necessary.) O: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| | | | AR-M550N/U (PM: 250K) | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|---|-----|---------------------------|-----------------------------------|--------------|------|------|------|-------|-------|-------|-------|-------|---------------|
| | | | AR-M620N/U, AR-M700N/U (PM: 300K) | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Unit name | No. | Part name | | | | | | | | | | | |
| Transport section | 1 | PS follower roller | | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| Paper exit reverse section/ duplex section | 1 | PS follower roller | | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 2 | Transport rollers | | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 3 | Transport paper guides | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| | 4 | Discharge brush | | × | × | × | × | × | × | × | × | × | |
| | 5 | Shaft (Conductive grease) | | × | × | × | × | × | × | × | × | × | UKOG-0012QSZZ |
| Other | 6 | Paper dust cleaner | | ○ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |



I. Drive section

X: Check (Clean, replace, or adjust as necessary.) O: Clean ▲: Replace Δ: Adjust ☆: Lubricate □: Shift position

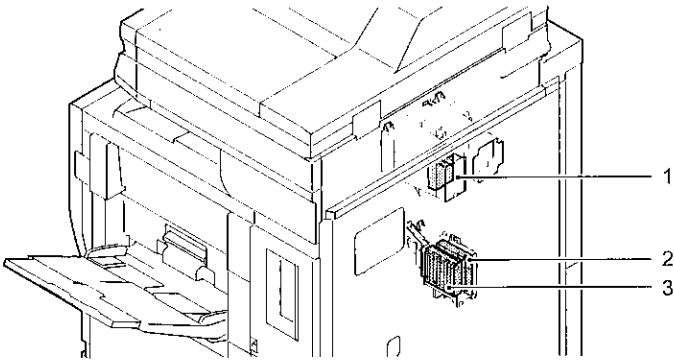
[illegible]

▲ : Feb. 9 2004

J. Filters

×: Check (Clean, replace, or adjust as necessary.) ○: Clean ▲: Replace △: Adjust ☆: Lubricate □: Shift position

| | | AR-M550N/U (PM: 250K) | When calling | 250K | 500K | 750K | 1000K | 1250K | 1500K | 1750K | 2000K | Remark |
|---------|---|-----------------------------------|-----------------|------|------|------|-------|-------|-------|-------|-------|--------|
| | | AR-M620N/U, AR-M700N/U (PM: 300K) | | 300K | 600K | 900K | 1200K | 1500K | 1800K | 2100K | 2400K | |
| Filters | 1 | Ozone filter | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 2 | DV ozone filter | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |
| | 3 | Toner filter | | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | |



3. Maintenance and disassembly

A. Necessary execution items in maintenance and servicing

(1) Execution items before maintenance and servicing

| Item | Simulation | |
|--|------------|----|
| | 22 | 13 |
| Check the developer counter value. | 22 | 13 |
| Check the OPC drum counter value. | 22 | 1 |
| Check the print count mode in each section and each operation mode. | 22 | 2 |
| Check the number of paper jam troubles. | 22 | 3 |
| Check the positions and contents of paper jams. | 22 | 12 |
| Check the positions and contents of paper jams (SPF section). | 22 | 4 |
| Check the contents of troubles. | 22 | 6 |
| Print the setting values and the adjustment values. | 22 | 8 |
| Check the number of use of the SPF, the scanner, the finisher, and inserter, the stapler, and the punch. | 22 | 9 |
| Check the number of use of each paper feed section. | 22 | 5 |
| Check the ROM version. | 22 | |

(2) Necessary execution items in maintenance and servicing

The necessary execution items in maintenance are shown below. (The items necessary to be executed are marked with "*" in the table below.)
The following items must be executed regardless of maintenance or not. (*).
(*): When repairing and inspecting (without replacement of maintenance parts), installing, cleaning each section, etc.

| No. | JOB No. | Work item | Simulation | When repairing (replacing consumable parts)/maintenance | | | | | When repairing (without replacement of consumable parts)/inspecting |
|-----|---------|---|----------------------|---|-----------------------------|--------------------------|---|----------------------|---|
| | | | | When installing | When replacing the OPC drum | When replacing developer | After cleaning the scanner (read) section | Periodic maintenance | |
| 1 | — | Toner concentration reference control level setting | 25-2 | * | | * | | | |
| 2 | — | The photoconductor counter is cleared. | 24-7 | | * | | | | |
| 3 | — | The photoconductor rotation counter is cleared. | 24-11 | | * | | | | |
| 4 | ADJ9 | Copy image quality adjustment (check) | 46-2,9,10,11,18,31 | * | * | * | * | * | |
| 5 | ADJ10 | FAX mode print image quality adjustment (check) | 46-12,13,14,15,16,45 | * | * | * | * | * | |
| 6 | ADJ11 | Scanner mode image quality adjustment (check) | 46-21,22,23,24,25,27 | * | * | * | * | * | |

- The JOB No. indicates the title number of the adjustment item described in the chapter of the adjustments.
- Refer to the details based on this number according to necessity.

(3) Execution items after maintenance and servicing

| Item | Simulation | |
|---|------------|---|
| | 24 | 1 |
| The paper jam/trouble data are cleared. | 24 | 2 |
| The use quantity counter of each paper feed section is cleared. | 24 | 3 |
| The numbers of use of the SPF, the scanner, the finisher, the inserter, the stapler, and the punch are cleared. | 24 | 4 |
| The maintenance counter is cleared. | 22 | 6 |
| The list of setting values and adjustment values is printed. | | |

[12] OTHER

1. VARIOUS COUNTERS SPECIFICATIONS]

A. Count specification

(1) Paper exit system counter

| Counter | Count-up timing | Count-up number | | | | | | Counter reset procedure, clear |
|----------------------------------|----------------------------|--|------------|-----------------------|------------|----------------------------|------------|--------------------------------|
| | | Simplex copy | | Duplex copy | | | | |
| | | Paper feed tray – Main unit paper exit | | Paper feed tray – ADU | | ADU – Main unit paper exit | | |
| | | Small size | Large size | Small size | Large size | Small size | Large size | |
| Total counter (Note) | When transfer is completed | 1 | 2 (1) | 1 | 2 (1) | 1 | 2 (1) | — |
| Maintenance counter | When transfer is completed | 1 | 2 (1) | 1 | 2 (1) | 1 | 2 (1) | Sim24-4 |
| Developer counter | When transfer is completed | 1 | 2 (1) | 1 | 2 (1) | 1 | 2 (1) | Sim24-5 |
| All valid paper counter (Note) | When paper exit | 1 | 2 (1) | — | — | 2 | 4 (2) | — |
| Copy counter (Copy valid paper) | When paper exit | 1 | 2 (1) | — | — | 2 | 4 (2) | Sim24-6 |
| FAX counter | When paper exit | 1 | 2 (1) | — | — | 2 | 4 (2) | Sim24-10 |
| Print counter | When paper exit | 1 | 2 (1) | — | — | 2 | 4 (2) | Sim24-9 |
| Internet FAX counter | When paper exit | 1 | 2 (1) | — | — | 2 | 4 (2) | Sim24-15 |
| Document filing counter | When paper exit | 1 | 2 (1) | — | — | 2 | 4 (2) | Sim24-15 |
| Right side paper exit counter | When center paper exit | 1 | 2 (1) | — | — | 2 | 4 (2) | — |
| Other counter (Self print, etc.) | When paper exit | 1 | 2 (1) | — | — | 2 | 4 (2) | Sim24-9 |

Large size: A3, 11 x 17. (Greater size than paper length 384mm)

* (): Count-up number when setting to the large size single count up.

(2) Document, finishing, paper feed system counter

| Counter | | Mode | Count event | Count-up condition | Counter reset procedure, clear |
|-----------------------|------------------------|---|---------------------------------|---|--------------------------------|
| SPF counter | | All modes | SPF paper feed number | Count is made when starting SPF paper pick. | Sim24-3 |
| Finish stamp counter | | FAX send Internet FAX send | Finish stamp use number | Count is made when stamp is ON. | Sim24-3 |
| Staple counter | | All modes (Including inserter stand alone process) | Staple number | Count is made when bundle exit process is completed. Double count is made when stapling two positions. In the inserter stand alone mode, count is made when process is completed. | Sim24-3 |
| Punch counter | | All modes (Including inserter stand alone process) | Punch number | Count is made when bundle exit process is completed. 1 count regardless of the kind of the punch unit (2-hole, 3-hole, etc.) In the inserter stand alone mode, count is made when process is completed. | Sim24-3 |
| Saddle staple counter | | All modes (Including inserter stand alone process) | Saddle staple number | Count is made when bundle paper exit process is c completed. Only one count is added. In the inserter stand alone mode, count is made when process is completed. | Sim24-3 |
| Scan total counter | | All modes | Scan number | Count is made when scan is completed. | Sim24-3 |
| ADU counter | | All modes | ADU paper feed number | Count is made when paper feed from the ADU section is started. | Sim24-2 |
| Inserter counter | | All modes (Including inserter offline process) | Inserter tray paper feed number | Count is made when paper feed from the inserter tray is started. In the inserter stand alone mode, count is made when process is completed. | Sim24-3 |
| Paper feed counter | Manual paper feed tray | All modes | Tray paper feed number | Count is made when paper feed from each tray is started. | Sim24-2 |
| | Paper feed tray 1 | | | | Sim24-2 |
| | Paper feed tray 2 | | | | Sim24-2 |
| | Paper feed tray 3 | | | | Sim24-2 |
| | Paper feed tray 4 | | | | Sim24-2 |
| | LCC | | | | Sim24-2 |

(3) Send system counter

| Counter | Mode | Count event | Count-up condition | Counter reset procedure, clear |
|--|---|--|--|--------------------------------|
| Accumulated number of FAX send | G3 FAX send | Number of send | Except for the serial transmit operation, one reservation is counted as one communication. For the serial transmit operation, count is made for each communication individually. Recall is not included. Polling is counted as a number of send. | Sim24-10 |
| Accumulated page number of FAX send | G3 FAX send | Total page number of send | In the serial transmit operation, each communication is counted as one individually. In bulletin board send, the page number of send is counted. | Sim24-10 |
| Accumulated time of FAX send | G3 FAX send | Send time (Including resending time.) | | Sim24-10 |
| Accumulated page number of scanner scan | Scan to E-mail send SHARP DESK send FTP send | Page number of scan | Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) In case of a send error (excluding document jam) • E-mail → Not counted. • SHARP DESK/FTP → Counted. | Sim24-15 |
| Accumulated number of mail send | Scan to E-mail send | Number of mails reached to destination servers | Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) Cancel and network error are not counted. | Sim24-15 |
| Accumulated number of FTP send | SHARP DESK send FTP send | Number of send reached to destination servers | Mails transmitted by FTP send are counted in the accumulated number of mail send. Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) Cancel and network error are also counted. | Sim24-15 |
| Accumulated number of internet FAX send | Internet FAX send | Page number of send | Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) The final send result is counted. A send error is counted. Resend is not counted. Cancel and CE error are not counted. | Sim24-15 |
| Accumulated number of internet FAX receive | Internet FAX send | Page number of scan | Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) The final send result is counted. A communication error (except for document jam) is counted. Cancel and CE error are not counted. A send (transfer, F code relay broadcast) without document scan is not counted. | Sim24-15 |
| Scanner trial counter | Internet FAX send Scan to E-mail send SHARP DESK send FTP send | Page number of scan | Count is made for every scan of page. Count is made even when send is not completed. The operation is terminated when the count number exceeds 500. | — |
| Page number of Scan to HDD | When reading SCAN TO HDD | HDD storage page number | | Sim24-15 |

(4) Receive system counter

| Counter | Mode | Count event | Count-up condition | Counter reset procedure, clear |
|---|----------------------|-----------------------------|---|--------------------------------|
| The accumulated page number of FAX receive print | G3 FAX receive | Total output page number | The FAX separator sheet is also counted. When polling, the number of received pages is counted. Count by size and count in recovery are the same as the copier specifications. (Counted by the print system.) | Sim24-10 |
| Accumulated time of FAX receive | G3 FAX receive | Receive time | | Sim24-10 |
| Accumulated number of internet FAX receive | Internet FAX receive | Receive number | A normal mail receive is also counted. Count is made regardless of normal or abnormal. Count is made regardless of print result. | Sim24-15 |
| Accumulated page number of internet FAX receive print | Internet FAX receive | Total receive output number | Count is made when output is made on a normal mail receive. Print of mail text is not counted. The FAX separator sheet is also counted. Count by size and count in recovery are the same as the copier specifications. (Counted by the print system.) | Sim24-15 |

(5) Department counter

| Operation content | Data location | | | | Conforming count mode (SIM 26-5) | | | Count-up condition |
|--------------------------------|-----------------|-----|---------------------|---------|----------------------------------|-------------|----|---|
| | MFP Control PWB | FAX | Scanner control PWB | PCU PWB | TOTAL | Maintenance | DV | |
| Copy counter | ● | | | | ■ | | | |
| Print counter | ● | | | | ■ | | | |
| FAX send page number counter | ● | | | | ■ | | | Department FAX send page number • In the serial transmit operation, each communication is counted as one individually. |
| Network scanner counter | ● | | | | — | — | — | Department network scanner scan page number • iFAX and network scanner • Even in the serial transmit operation, the page number of one scan is counted. (The number of receivers is not counted.) |
| I-FAX send page number counter | ● | | | | ■ | | | Department FAX send page number • In the serial transmit operation, each communication is counted as one individually. |
| Document filling | ● | | | | ■ | | | |

(6) Printer job count-up specification

| | Total use page number counter | | Department counter | | |
|---|-------------------------------|--------|----------------------|-------------------------------------|---------------------------|
| | PRINTS | OTHERS | Key operation number | Driver specification account number | Other department (OTHERS) |
| Printer job (Without account administration) | ○ | — | — | — | — |
| Printer job (With account specification) * | ○ | — | — | ○ | — |
| Printer job (Without account specification) * | ○ | — | — | — | ○ |
| Notice in printer job (Without account administration) | ○ | — | — | — | — |
| Notice in printer job (With account specification) * | ○ | — | — | — | ○ |
| Notice in printer job (Without account specification) * | ○ | — | — | — | ○ |
| List print | — | ○ | — | — | — |
| Total use page number print | — | ○ | — | — | — |
| Each department total page number print | — | ○ | — | — | — |
| Engine self print | — | — | — | — | — |

* When there is "NO" in account administration, or when there is not "NO."

(7) Total counter specifications

The total count viewed from the user and the counter used for charging are "Total output counter (total valid paper counter)."

| | Total output counter (Total valid paper counter) | Total counter |
|---|--|--|
| Display when the copy key is ON. | ■ | — |
| List print | ■ | — |
| Valid paper counter to send to serial RIC | ■ | — |
| Total counter to send to serial RIC | ■ | — |
| E-RIC mail text counter | ■ | — |
| E-RIC attached file | ■ | ■ |
| | (Counter for the first send) | (Counter to send in the midst of packet) |
| SIMULATION | Displayed/printed as Total output. | Displayed/printed as Total |

(8) Blank paper count specification

| Mode | Print mode | Count attribute | | Blank paper count setting (SIM 26-52) | | | | Remark |
|------------------|---------------------------------------|-----------------|--------------|---------------------------------------|------------|------------|------------|--------------------------------------|
| | | Print surface | | 0: NO | | 1: YES | | |
| | | Front surface | Back surface | Small size | Large size | Small size | Large size | |
| Normal | Without print (Invalid paper exit) | X | — | 0 | 0 | 0 | 0 | |
| | Without print (Blank paper insertion) | Δ | — | 0 | 0 | 1 | 2 (1) *1 | |
| | Single face print (Single face mode) | ○ | — | 1 | 2 (1) *1 | 1 | 2 (1) *1 | SS/DS |
| | Single face print (Duplex mode) | ○ | X | 1 | 2 (1) *1 | 1 | 2 (1) *1 | SD (Odd number of documents) |
| | Duplex print | ○ | ○ | 2 | 4 (2) *1 | 2 | 4 (2) *1 | SD (Even number of documents)/ DD |
| Front cover | Without print | Δ | — | 0 | 0 | 1 | 2 (1) *1 | |
| | With print (Single face) | ○ | — | 1 | 2 (1) *1 | 1 | 2 (1) *1 | |
| | With print (Duplex) | ○ | ○ | 2 | 4 (2) *1 | 2 | 4 (2) *1 | |
| Back cover | Without print | X | Δ | 0 | 0 | 1 | 2 (1) *1 | |
| | With print (Single face) | X | ○ | 1 | 2 (1) *1 | 1 | 2 (1) *1 | |
| | With print (Duplex) | ○ | ○ | 2 | 4 (2) *1 | 2 | 4 (2) *1 | |
| Insert paper | Without print | Δ | — | 0 | 0 | 1 | 2 (1) *1 | |
| | With print (Single face) | ○ | — | 1 | 2 (1) *1 | 1 | 2 (1) *1 | |
| | With print (Duplex) | ○ | ○ | 2 | 4 (2) *1 | 2 | 4 (2) *1 | |
| OHP insert paper | Without print | Δ | — | 0 | 0 | 1 | 2 (1) *1 | |
| | With print (Single face) | ○ | — | 1 | 2 (1) *1 | 1 | 2 (1) *1 | |
| | With print (Duplex) | — | — | — | — | — | — | Duplex print inhibition |

* Large size: A3, 11 x 17. (Greater size than paper length 384mm)

*1: Follows SIM 26-5 (Count-up mode). (Default: Double count-up (Set value: 2))

(): Large size single count-up setting (Count-up number when set to 1.)

○: Counts up.

X: Does not count up.

Δ: Follows SIM 26-52 setting.

0: Does not count up. (Japan/SCA default) 1: Counts up. (Other default)

—: Out of target (No print process)

(9) Consumables counter specification

| Counter | Count-up timing | Count-up number | | | | | | Counter reset procedure, clear |
|--|----------------------------|--|------------|-----------------------|------------|----------------------------|------------|--------------------------------|
| | | Simplex print | | Duplex print | | | | |
| | | Paper feed tray – Main unit paper exit | | Paper feed tray – ADU | | ADU – Main unit paper exit | | |
| | | Small size | Large size | Small size | Large size | Small size | Large size | |
| OPC drum counter | When transfer is completed | 1 | 2 (1) | 1 | 2 (1) | 1 | 2 (1) | Sim24-7 |
| OPC drum rotation counter (sec) | When transfer is completed | — | — | — | — | — | — | Sim24-11 |
| Developer counter | When transfer is completed | 1 | 2 (1) | 1 | 2 (1) | 1 | 2 (1) | Sim24-5 |
| Developing roller rotation counter (sec) | When transfer is completed | — | — | — | — | — | — | Sim24-11 |
| Toner counter | When transfer is completed | 1 | 2 (1) | 1 | 2 (1) | 1 | 2 (1) | — |
| Toner supply counter (sec) | When transfer is completed | — | — | — | — | — | — | — |

| Work item | Test Command | Reset item | Included Test Command |
|---|--------------|-------------------------------------|-----------------------|
| Setting the toner concentration control level | Sim25-2 | Developer counter | Sim24-5 |
| | | DV unit running time counter (sec) | Sim24-11 |
| Reset the OPC drum counter | Sim24-7 | OPC drum counter | — |
| Reset the Developer counter | Sim24-5 | Developer counter | — |
| Reset the OPC drum running time counter (sec) | Sim24-11 | OPC drum running time counter (sec) | — |
| Reset the DV running time counter (sec) | Sim24-11 | DV running time counter (sec) | — |

B. Location and display of each counter data

[illegible]

1

2. Web setting service mode

A. Outline

The Web setting service mode provides the following functions:

- Font/Form Download
- Device Cloning

These functions are used to backup the user data and the key operator program setting data, and to import backup data to another machine. By using these functions, two or more machines can be set in the same conditions in a short time.

- i-Fax Setup

This function is used to backup i-Fax receive data to the FTP server.

By using this function, receive data are backed up to the FTP server when they cannot be printed by some reasons (paper empty, toner empty, paper jam, etc.) and can be printed out after recovery of the machine.

After completion of printing the backup data, they are deleted from the FTP server.

B. Operating procedures

Entering the Web setting mode

- 1) Boot the browser software.
- 2) Enter "xxx.xxx.xxx.xxx(IP address)/xxxx_xxxxx.html" and press ENTER key.
- 3) Enter the user name and the password, and press OK button.

Note: The default user name and the default password are as follows:

User name: service

Password: shArp

The password can be optionally changed in the following procedures:

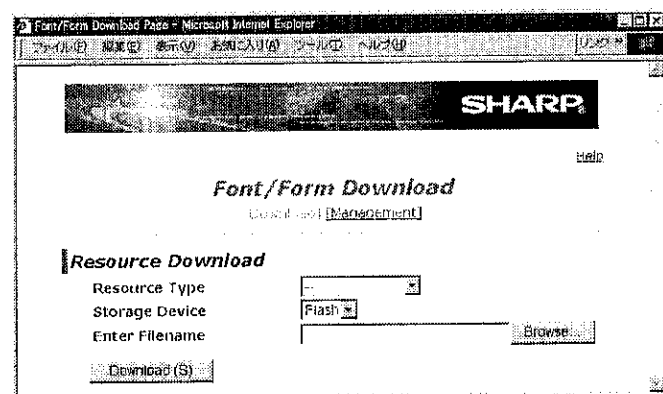
- 1) Enter "xxx.xxx.xxx.xxx(IP address)/password_setting.html" and press ENTER key.
- 2) Enter a new password.
- 3) Enter the new password again in the check column.
- 4) Press SUBMIT button.

C. Details

(1) Font / Form Download

(Font download)

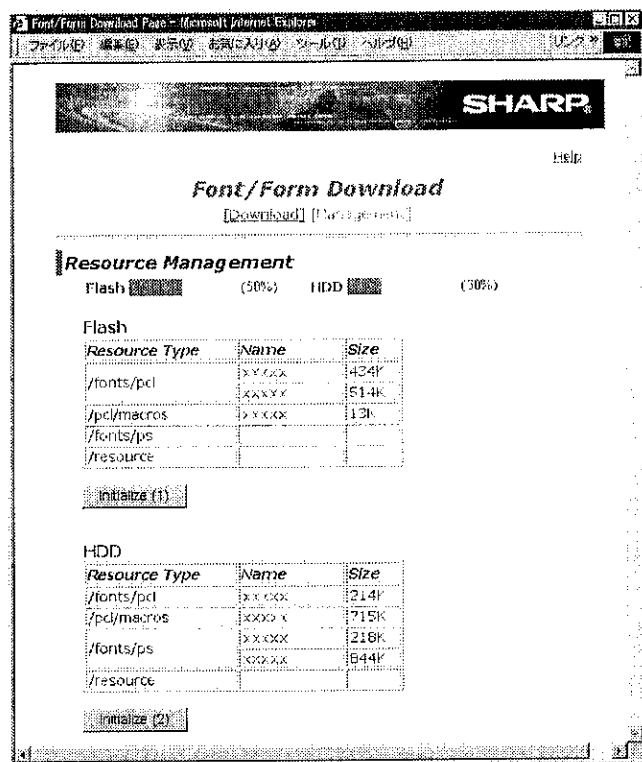
- 1) Press "xxx.xxx.xxx.xxx(IP address)/font_down.html" and press ENTER key.
- 2) Enter the user name and the password, and press OK button.



- 3) Select "Download" menu.
- 4) Select Resourced type.
- 5) Select Storage Device.
- 6) Select Font file.
- 7) Press "Download" button.

(Check or delete of downloaded font)

- 1) Press "xxx.xxx.xxx.xxx(IP address)/font_down.html" and press ENTER key.
- 2) Enter the user name and the password, and press OK button.
- 3) Select Management menu.



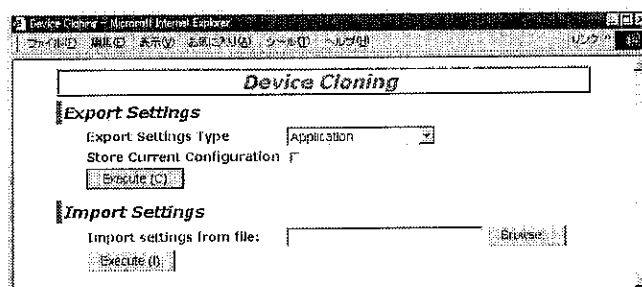
The list of downloaded fonts and the used percentage of the font area in the memory device are displayed.

Press "Initialize" button and press Yes key, and the downloaded fonts will be deleted.

(2) Device Cloning

(Backup)

- 1) Press "xxx.xxx.xxx.xxx(IP address)/device_cloning.html" and press ENTER key.
- 2) Enter the user name and the password, and press OK button.



- 3) Select an item to be backed up. (Application / Key operator setting)
- 4) Press Execute key.
- 5) Press Save button. (File download mode)
- 6) Select the destination of save.
- 7) Press Save button.

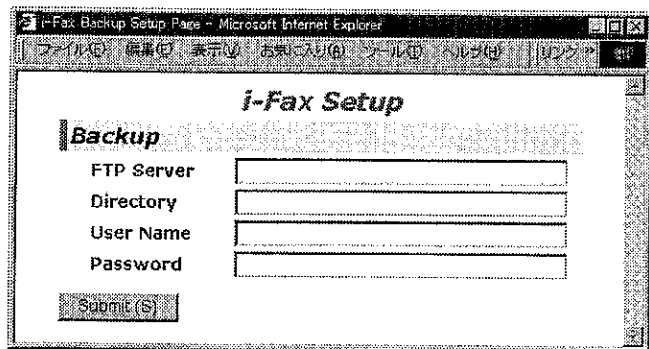
(Import)

- 1) Press "xxx.xxx.xxx.xxx(IP address)/device_cloning.html" and press ENTER key.
- 2) Enter the user name and the password, and press OK button.
- 3) Select the backed up file (xxxx.bin).
- 4) Press Execute key.

The backed up data (setup data) are written into the machine.

(3) i-Fax Setup

- 1) Press "xxx.xxx.xxx.xxx(IP address)/ifax_ftp.html" and press ENTER key.
- 2) Enter the user name and the password, and press OK button.



- 3) Enter the FTP server address to which i-Fax receive data are backed up.
- 4) Enter the directory.
- 5) Enter the user name
- 6) Enter the password.
- 7) Press Submit button.

3. Paper jam code

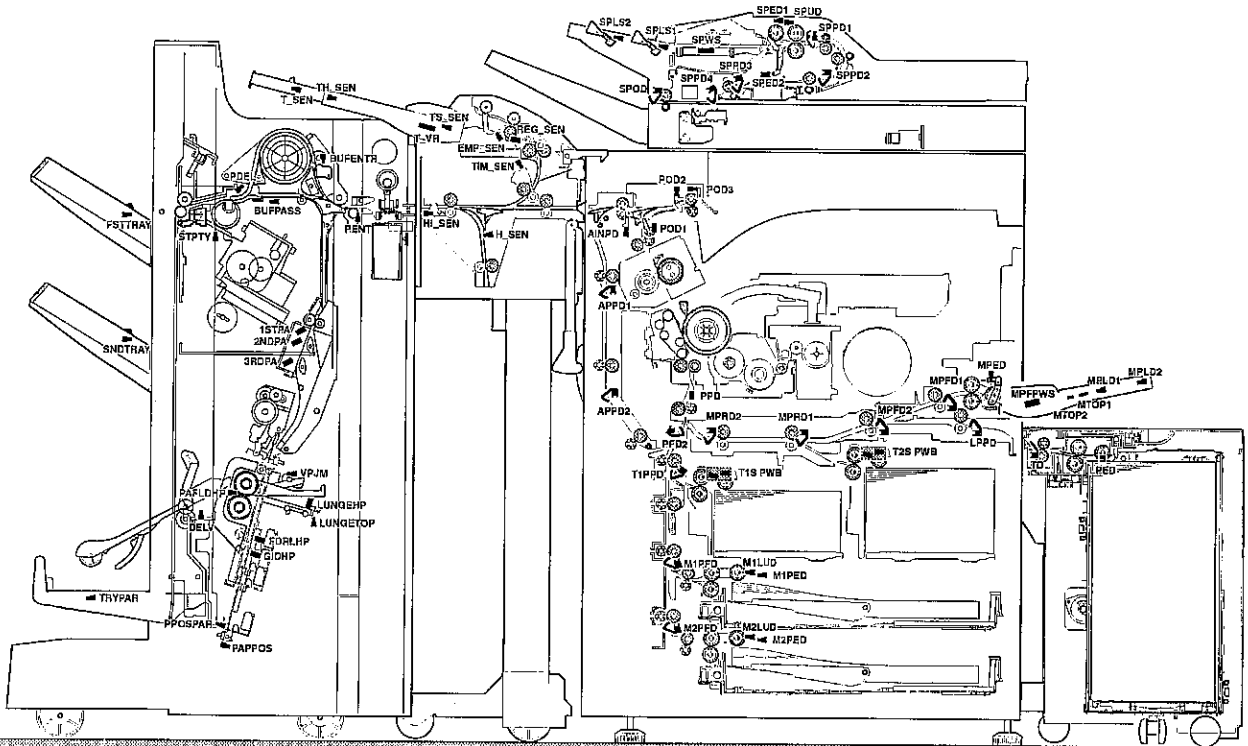
A. Paper jam judgment conditions

| JAM code | Content | JAM detection method | | JAM judge time (JAMTST - JAMJD) | |
|------------------|---|--|------------------------------|---------------------------------|------------------------|
| | | JAM detection timer start trigger (JAMTST) | JAM judge dedetector (JAMJD) | 55/62 PPM MODEL (335mm/s) | 70 PPM MODEL (395mm/s) |
| TRAY1 | Tray 1 paper feed jam (PFD2 not-reached) | T1PFC ON | PFD2 ON | 1608ms | 1516ms |
| PFD2_NM1 | PFD2 not-reached jam (Tray 3 feed paper) | VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 13, VPM turns ON.) | PFD2_NM1 | 541ms | 480ms |
| PFD2_NM2 | PFD2 not-reached jam (Tray 4 feed paper) | VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 13, VPM turns ON.) | PFD2_NM2 | 541ms | 480ms |
| PFD2_NAD | PFD2 not-reached jam (ADU re-feed paper) | APPD2 ON | PFD2_NAD | 819ms | 710ms |
| PPD_NMF | PPD1 not-reached jam (Manual feed tray feed paper) | MPRD2 ON | PPD ON | 429ms | 364ms |
| PPD_NT1 | PPD1 not-reached jam (Tray 1 feed paper) | PFD2 ON | PPD ON | 352ms | 298ms |
| PPD_NT2 | PPD1 not-reached jam (Tray 2 feed paper) | MPRD2 ON | PPD ON | 429ms | 364ms |
| PPD_NM1 | PPD1 not-reached jam (Tray 3 feed paper) | PFD2 ON | PPD ON | 352ms | 298ms |
| PPD_NM2 | PPD1 not-reached jam (Tray 4 feed paper) | PFD2 ON | PPD ON | 352ms | 298ms |
| PPD_NLC | PPD1 not-reached jam (LCC paper feed paper) | MPRD2 ON | PPD ON | 429ms | 364ms |
| PPD_NAD | PPD1 not-reached jam (ADU re-feed paper) | PFD2 ON | PPD ON | 352ms | 298ms |
| POD1_N | POD1 not-reached jam | RRC ON | POD1 ON | 943ms | 800ms |
| POD2_N | POD2 not-reached jam | POD1 ON | POD2 ON | 429ms | 364ms |
| AINPD_N (Saddle) | ADU paper entry sensor not-reached jam | DGS ON (When the paper lead edge is transported to 30mm apart from the switchback operation start position.) | AINPD ON (Saddle) | 435ms | 435ms |
| AINPD_N (Other) | ADU paper entry sensor not-reached jam | DGS ON (When the paper lead edge is transported to 30mm apart from the switchback operation start position.) | AINPD ON (Other) | 318ms | 318ms |
| APPD1_N | ADU transport sensor 1 not-reached jam | AINPD ON | APPD1ON | 292ms | 292ms |
| APPD2_N | ADU transport sensor 2 not-reached jam | APPD1 ON + 90mm | APPD2 ON | 375ms | 375ms |
| DESK1 | Tray 3 paper feed jam (M1PFD not-reached) | M1PFC ON | M1PFD ON | 1531ms | 1450ms |
| DESK2 | Tray 4 paper feed jam (M2PFD not-reached) | M2PFC ON | M2PFD ON | 1531ms | 1450ms |
| M1PFD_N2 | M1PFD not-reached jam (Tray 4 feed paper) | M2PFD ON | M1PFD ON | 513ms | 435ms |
| MPRD2_N2 | MPRD2 not-reached jam (Tray 2 feed paper) | VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 4, VPM turns ON.) | MPRD2 ON | 467ms | 417ms |
| MPRD2_NM | MPRD2 not reached jam (Manual paper feed tray feed paper) | VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 4, VPM turns ON.) | MPRD2 ON | 467ms | 417ms |

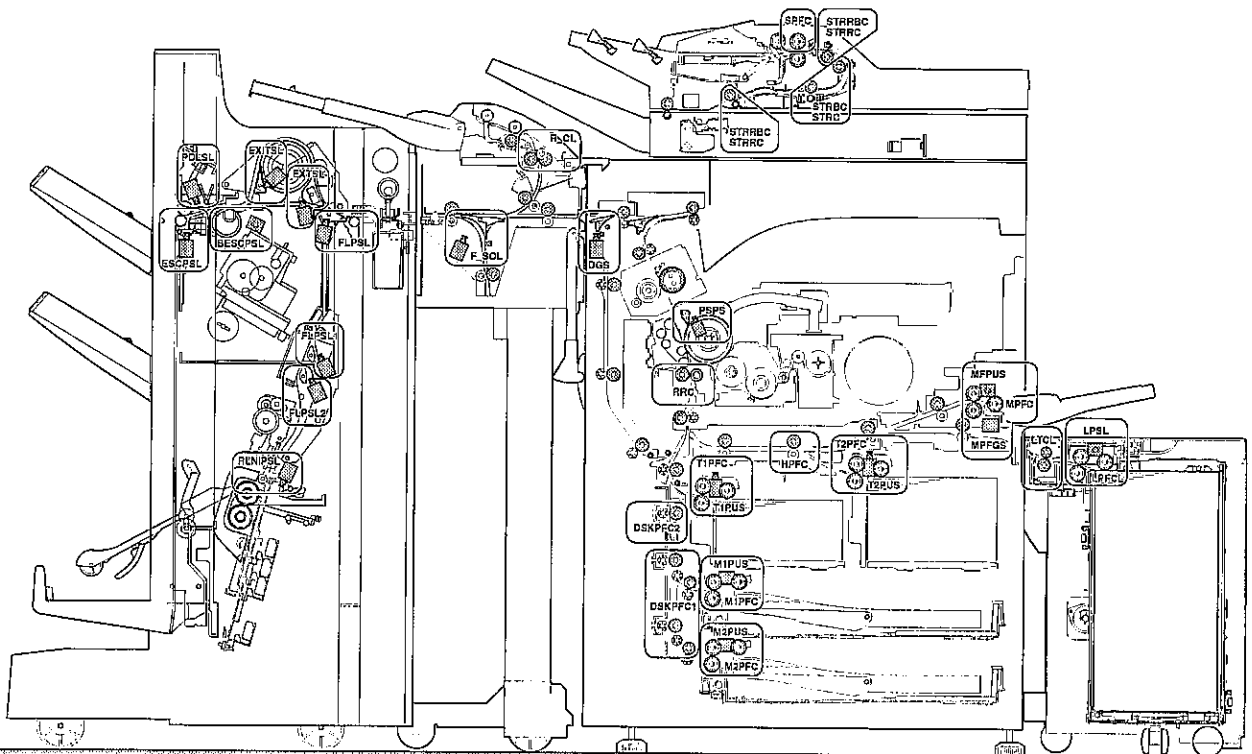
| JAM code | Content | JAM detection method | | JAM judge time (JAMTST - JAMJD) | |
|--|---|---|--|--|------------------------|
| | | JAM detection timer start trigger (JAMTST) | JAM judge detector (JAMJD) | 55/62 PPM MODEL (335mm/s) | 70 PPM MODEL (395mm/s) |
| MPRD2_NL | MPRD2 not-reached jam (LCC paper feed paper) | VPM ON (When the paper lead edge comes to 40mm in front of the transport roller 4, VPM turns ON.) | MPRD2 ON | 467ms | 417ms |
| ▲ TRAY2 | Tray 2 paper feed jam (MPRD1 not-reached) | T2PFC ON | MPRD1 ON | 1519ms | 1440ms |
| MPRD1_NM | MPRD1 not-reached jam (Manual paper feed tray feed paper) | MPFD2 ON | MPRD1 ON | 564ms | 478ms |
| MPRD1_NL | MPRD1 not-reached jam (LCC paper feed paper) | MPFD2 ON | MPRD1 ON | 564ms | 478ms |
| MPFD2_NM | MPFD2 not-reached jam (Manual paper feed tray feed paper) | MPFD1 ON | MPFD2 ON | 570ms | 483ms |
| MPFD2_NL | MPFD2 not-reached jam (LCC paper feed paper) | LPPD ON | MPFD2 ON | 677ms | 574ms |
| ▲ BPT | Manual tray feed jam (MPFD1 not-reached) | MPFC ON | MPFD1 ON | 1367ms | 1311ms |
| LPPD_N | LPPD not-reached jam | LTD ON(LCC) | LPPD ON | 1447ms | 1379ms |
| ▲ PFD2_ST1 | PFD2 remaining jam (Tray 1 feed paper) | RRC ON | PFD2 OFF (PFD2 paper rear edge detection) + 65mm | PFD2 OFF (PFD2 paper rear edge detection) + 65mm | |
| PFD2_SM1 | PFD2 remaining jam (Tray 3 feed paper) | M1PFD OFF (When paper is transported by 50mm from M1PFD paper rear edge detection.) | PFD2 OFF | 671ms | 569ms |
| PFD2_SM2 | PFD2 remaining jam (Tray 4 feed paper) | M1PFD OFF (When paper is transported by 50mm from M1PFD paper rear edge detection.) | PFD2 OFF | 671ms | 569ms |
| PFD2_SAD | PFD2 remaining jam (ADU re-feed paper) | RRC ON | PFD2 OFF (PFD2 paper rear edge detection) + 65mm | PFD2 OFF (PFD2 paper rear edge detection) + 65mm | |
| ▲ PPD_ST1 | PPD1 remaining jam (Tray 1 feed paper) | PFD2 OFF | PPD OFF | 352ms | 298ms |
| PPD_ST2 | PPD1 remaining jam (Tray 2 feed paper) | MPRD2 OFF | PPD OFF | 429ms | 364ms |
| PPD_SM1 | PPD1 remaining jam (Tray 3 feed paper) | PFD2 OFF | PPD OFF | 352ms | 298ms |
| PPD_SM2 | PPD1 remaining jam (Tray 4 feed paper) | PFD2 OFF | PPD OFF | 352ms | 298ms |
| PPD_SLC | PPD1 remaining jam (LCC paper feed paper) | MPRD2 OFF | PPD OFF | 429ms | 364ms |
| PPD_SAD | PPD1 remaining jam (ADU re-feed paper) | PFD2 OFF | PPD OFF | 352ms | 298ms |
| PPD_SMF | PPD1 remaining jam (Manual feed tray feed paper) | MPRD2 OFF | PPD OFF | 429ms | 364ms |
| POD1_S (Right paper exit, infinite form) | POD1 remaining jam | PPD OFF | POD1 OFF | 1128ms | 956ms |
| POD1_S (Left paper exit) | POD1 remaining jam | PPD OFF | POD1 OFF | 1128ms | 956ms |
| POD2_SR | POD2 remaining jam (When paper is discharged on the right side of the machine.) | POD1 OFF | POD2 OFF | 429ms | 364ms |
| POD2_SL | POD2 remaining jam (When paper is discharged on the left side of the machine.) | POM1 ON (Switchback start) | POD2 OFF | Paper length + 115mm | |
| AINPD_S (Saddle paper exit) | ADU paper entry sensor remaining jam | POD2 OFF | AINPD OFF | 187ms | 187ms |

| JAM code | Content | JAM detection method | | JAM judge time (JAMTST - JAMJD) | |
|-----------------|---|--|--|---|------------------------|
| | | JAM detection timer start trigger (JAMTST) | JAM judge dedector (JAMJD) | 55/62 PPM MODEL (335mm/s) | 70 PPM MODEL (395mm/s) |
| AINPD_S (Other) | ADU paper entry sensor remaining jam | POD2 OFF | AINPD OFF | 187ms | 187ms |
| APPD1_S | ADU transport sensor 1 remaining jam | AINPD OFF | APPD1 OFF | 292ms | 292ms |
| APPD2_S | ADU transport sensor 2 remaining jam | LD ON | APPD2 OFF(APPD2 paper rear edge detection) + 65mm | APPD2 OFF(APPD2 paper rear edge detection) + 65mm | |
| ▲ M1PFD_S1 | M1PFD remaining jam (Tray 3 feed paper) | M1PFD ON | M1PFD OFF | Paper length + 65mm | |
| M1PFD_S2 | M1PFD remaining jam (Tray 4 feed paper) | M2PFD OFF | M1PFD OFF | 513ms | 435ms |
| M2PFD_S | M2PFD remaining jam | M2PFD ON | M2PFD OFF | Paper length + 65mm | |
| ▲ MPRD2_S2 | MPRD2 remaining jam (Tray 2 feed paper) | MPRD1 OFF | MPRD2 OFF | 653ms | 554ms |
| MPRD2_SM | MPRD2 remaining jam (Manual paper feed tray feed paper) | MPRD1 OFF | MPRD2 OFF | 653ms | 554ms |
| MPRD2_SL | MPRD2 remaining jam (LCC paper feed paper) | MPRD1 OFF | MPRD2 OFF | 653ms | 554ms |
| ▲ MPRD1_S2 | MPRD1 remaining jam (Tray 2 feed paper) | MPRD1 ON | MPRD1 OFF | Paper length + 65mm | |
| MPRD1_SM | MPRD1 remaining jam (Manual paper feed tray feed paper) | MPFD2 OFF | MPRD1 OFF | 564ms | 478ms |
| MPRD1_SL | MPRD1 remaining jam (LCC paper feed paper) | MPFD2 OFF | MPRD1 OFF | 564ms | 478ms |
| MPFD2_SM | MPFD2 remaining jam (Manual paper feed tray feed paper) | MPFD1 OFF | MPFD2 OFF | 570ms | 483ms |
| MPFD2_SL | MPFD2 remaining jam (LCC paper feed paper) | LPPD OFF | MPFD2 OFF | 1447ms | 1379ms |
| MPFD1_S | MPFD1 remaining jam | MPFD1 ON | MPFD1 OFF | Paper length + 65mm | |
| LPPD_S | LPPD remaining jam | LTD OFF (LCC paper feed complete) | LPPD ON | 1447ms | 1379ms |
| PPD_PRI | PPD1 jam (Image ready request is not sent from ICU.) | Image data send ready request command is sent (PCU to MFP CONTROL) | Image data send ready status is sent. (MFP CONTROL to PCU) | 30000ms | 30000ms |
| LPPD_LCC | LPPD jam (No reply in a certain time after preliminary paper feed from LCC and issuing the paper feed command.) | Preliminary paper feed request command is sent. (PCU to LCC) | Preliminary paper feed start status is sent. (LCC to PCU) | 70sec | 70sec |

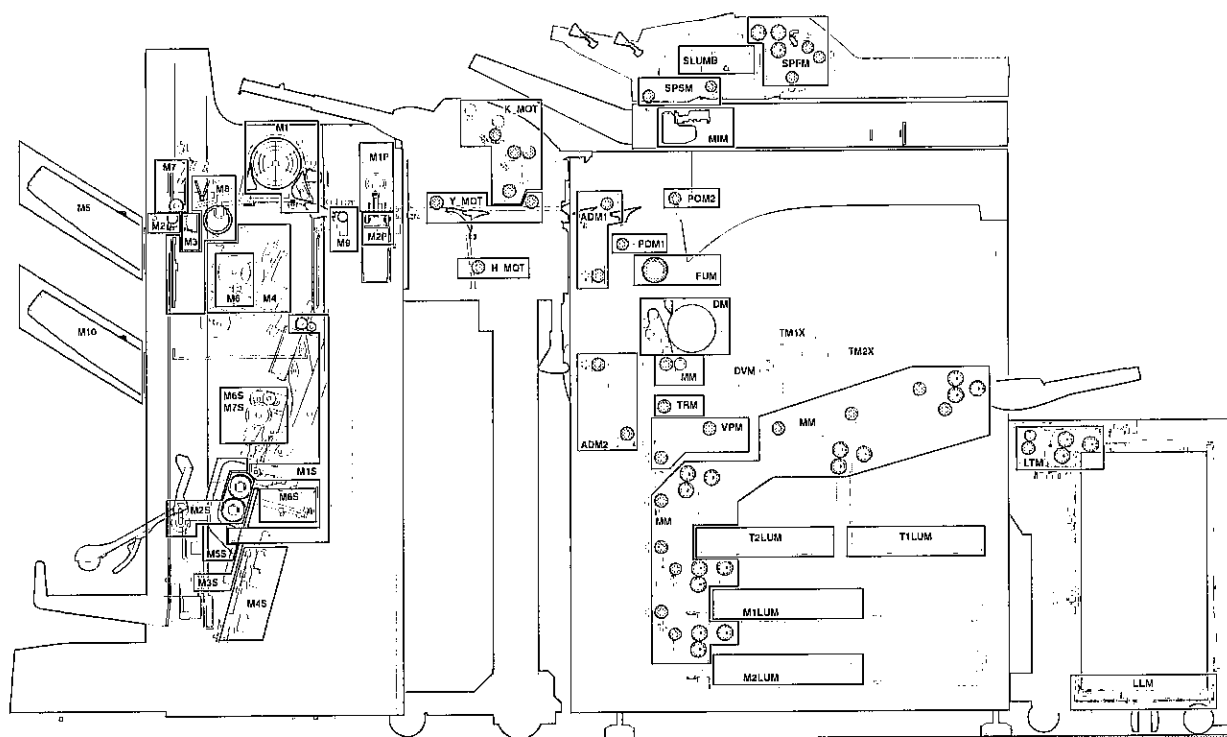
Sensor cross section



Clutch/solenoid cross section



Motor cross section



B. Inserter (AR-CF2) paper jam judgment conditions

| JAM CODE | Name | JAM detection method | | JAM judge distance |
|------------|---|---|-----------------------|--|
| | | JAM detection start trigger | JAM judge detector | |
| REG_SEN_N | Resist sensor not-reached JAM | Separation start | Resist sensor ON | (Distance from pick descending start to resist sensor ON) x 5 |
| REG_SEN_S | Resist sensor remaining JAM | Transport start from the take-up position (*1) | Resist sensor OFF | Max. document length (WLT) - (Resist sensor OFF to take-up position) + 200mm |
| TIM_SEN_N | Timing sensor not-reached JAM | Resist sensor ON | Timing sensor ON | Distance from resist sensor ON to timing sensor ON + 200mm |
| TIM_SEN_S | Timing sensor remaining JAM | Resist sensor OFF | Timing sensor OFF | Distance from resist sensor OFF to timing sensor OFF + 200mm |
| HI_SEN_NI | Paper exit sensor not-reached JAM (Inserter paper feed) | Timing sensor ON | Paper exit sensor ON | Distance from timing sensor ON to paper exit sensor ON + 200mm |
| HI_SEN_NP | Paper exit sensor not-reached JAM (Main unit paper feed) | Main unit paper exit command receive | Paper exit sensor ON | Distance from main unit side to paper exit sensor ON + 500mm |
| HI_SEN_S | Paper exit sensor remaining JAM (Main unit paper feed) | After passing by 20mm from the paper exit sensor ON | Paper exit sensor OFF | Max. document length (WLT) + 200mm |
| | Paper exit sensor remaining JAM (Inserter paper feed) | Timing sensor OFF | Paper exit sensor OFF | Distance from timing sensor OFF to paper exit sensor OFF + 200mm |
| H_SEN_NIN | Reverse sensor not-reached JAM (When entering the reverse path) | Timing sensor ON | Reverse sensor ON | Distance from timing sensor ON to reverse sensor ON + 100mm |
| H_SEN_NOUT | Reverse sensor not-reached JAM (When exiting from the reverse path) | Switchback start | Reverse sensor ON | Distance from reverse stop position (*2) to reverse sensor ON + 100mm |
| H_SEN_SIN | Reverse sensor remaining JAM (When entering the reverse path) | Timing sensor OFF | Reverse sensor OFF | Distance from timing sensor OFF to reverse sensor OFF + 100mm |
| H_SEN_SOUT | Reverse sensor remaining JAM (When exiting from the reverse path) | After passing 20mm from the reverse sensor ON | Reverse sensor OFF | Max. Document length (WLT) + 100mm |

*1) The take-up position is 30mm downstream from the vertical path transport roller.

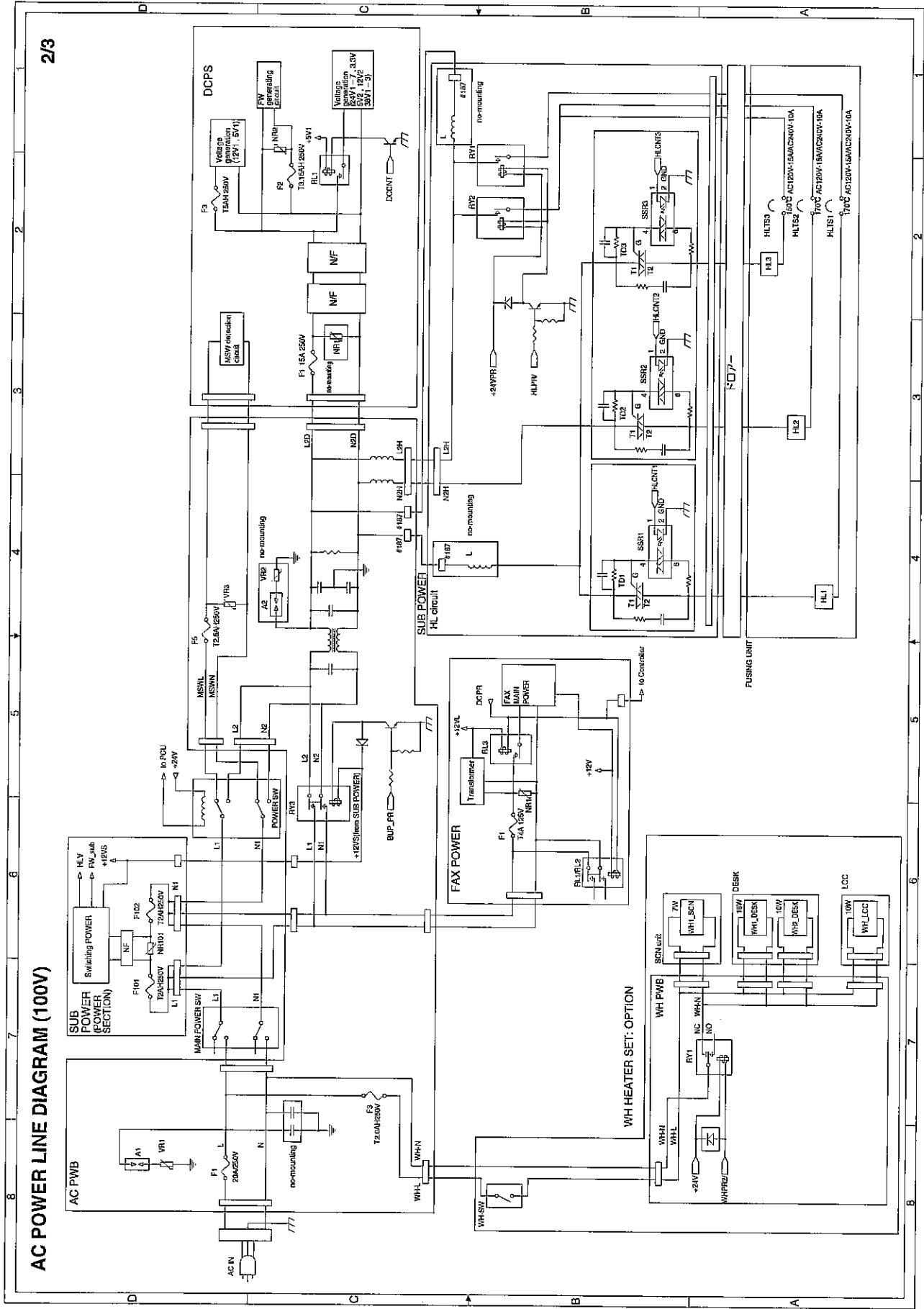
*2) The reverse stop position is 20mm downstream from the reverse sensor.

C. Finisher (AR-F15/F16) paper jam judgment conditions

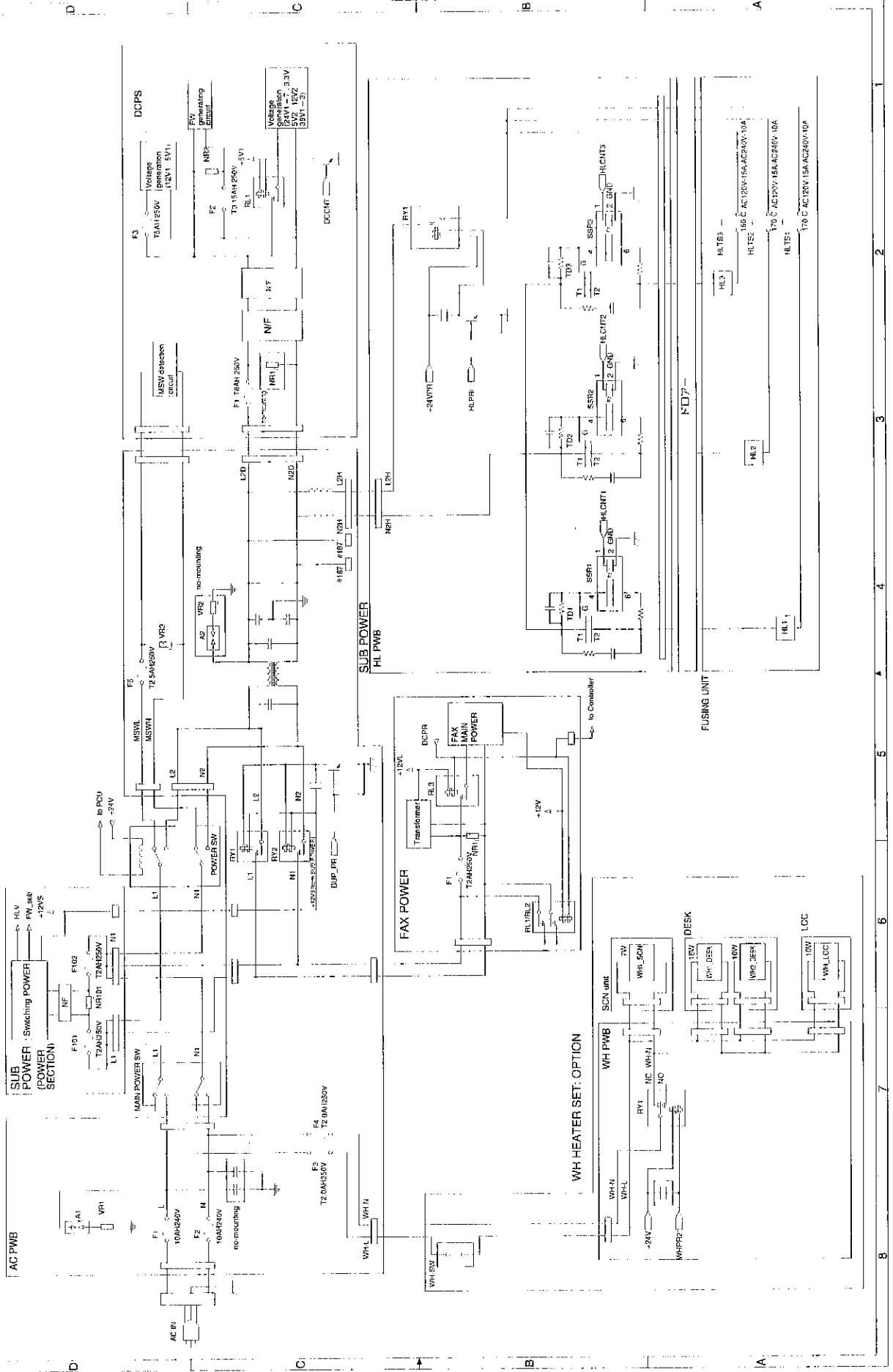
| JAM code | Content | JAM detection method | | JAM judgment time (Stacker: LTR horizontal size Saddle: LTR vertical size) |
|----------|---|---|--|---|
| | | JAM detection timer start trigger | JAM judge detector | Common to 55/62, 70PPM MODELS (Main unit paper exit speed: Stacker: 800mm/s Saddle: 420mm/s) |
| FES_N | FINISHER entry port sensor not-reached JAM | Main unit paper exit command reception | The paper entry sensor is not turned ON within the specified time. | 500ms |
| FES_S | FINISHER entry port remaining JAM | Paper entry sensor ON | The paper entry sensor is not turned OFF within the specified time. | 540ms |
| | FINISHER buffer sensor not-reached JAM | Paper entry sensor ON | The buffer sensor is not turned ON within the specified time. | 688ms |
| | FINISHER buffer sensor remaining JAM | Buffer sensor ON | The buffer sensor is not turned OFF within the specified time. | 540ms |
| | FINISHER paper exit sensor not-reached JAM | Entry port sensor ON | The paper exit sensor is not turned ON within the specified time. | Straight path transport: 453ms Buffer path transport: 815ms |
| | FINISHER paper exit sensor remaining JAM | Paper exit sensor ON | The paper exit sensor is not turned OFF within the specified time. | 840ms |
| FFPS_N | FINISHER saddle transport path sensor not-reached JAM | Entry port sensor ON | The saddle transport path sensor is not turned ON within the specified time. | 914ms |
| FFPS_S | FINISHER saddle transport path sensor remaining JAM | Saddle transport path sensor ON | The saddle transport path sensor is not turned OFF within the specified time. | 996ms |
| | FINISHER saddle paper exit sensor not-reached JAM | Folding edge sensor ON (Completion of thrust operation) | The saddle transport sensor is not turned ON though paper is transported in the specified distance. | 180mm (Twice as much as the normal distance) |
| | FINISHER saddle paper exit sensor remaining JAM | Saddle paper exit sensor ON | The saddle paper exit sensor is not turned OFF though paper is transported in the specified distance. | 209.25mm (1.5 times as much as the normal distance) |
| FEXIT_S | FINISHER bundle exit remaining JAM | Start of bundle exit to the stack tray | The staple tray sensor is not turned OFF within the specified time. | 1000ms |
| FSTPL | FINISHER Stacker staple JAM | Start of stacker stapling | When the staple HP sensor does not sense ON within the specified time from staple HP sensor OFF in stapling process, and when the staple HP sensor detects ON in reverse rotation after stopping the stapler. | 500ms |
| | FINISHER saddle staple JAM | Start of saddle stapling | When the staple HP sensor does not sense ON within the specified time from stapler HP sensor OFF in stapling process, and when the staple HP sensor detects ON in reverse rotation after stopping the stapler. | 500ms |
| FPNCH | FINISHER punch JAM | Punch HP OFF after starting punching | The punch HP sensor does not turn ON within the specified time. | 200ms |
| FDOP | FINISHER door open JAM | One of finisher doors open | Finisher door open is detected in finishing process. | --- |

[illegible]

2. Power line chart



AC POWER LINE DIAGRAM (200V)

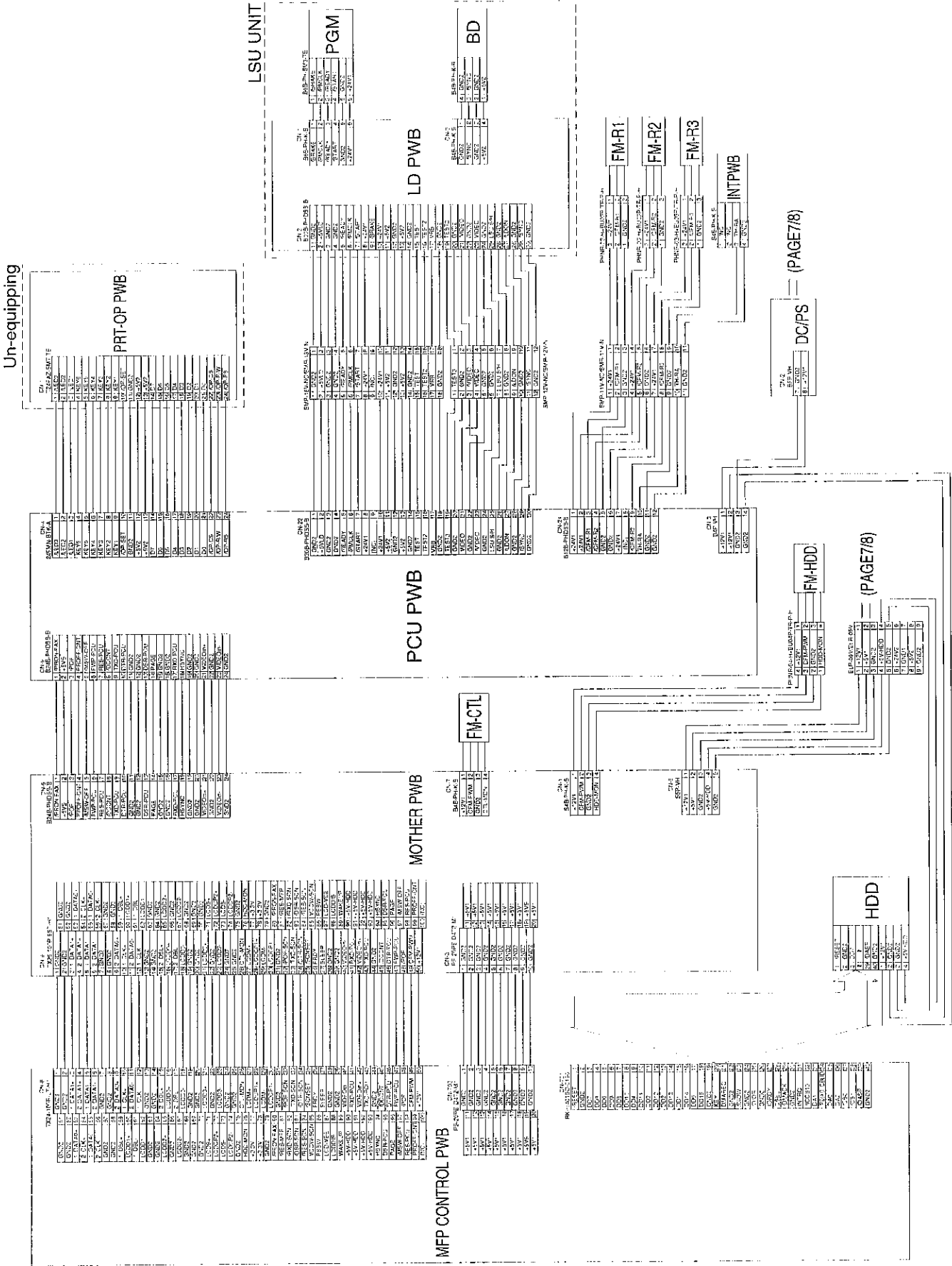




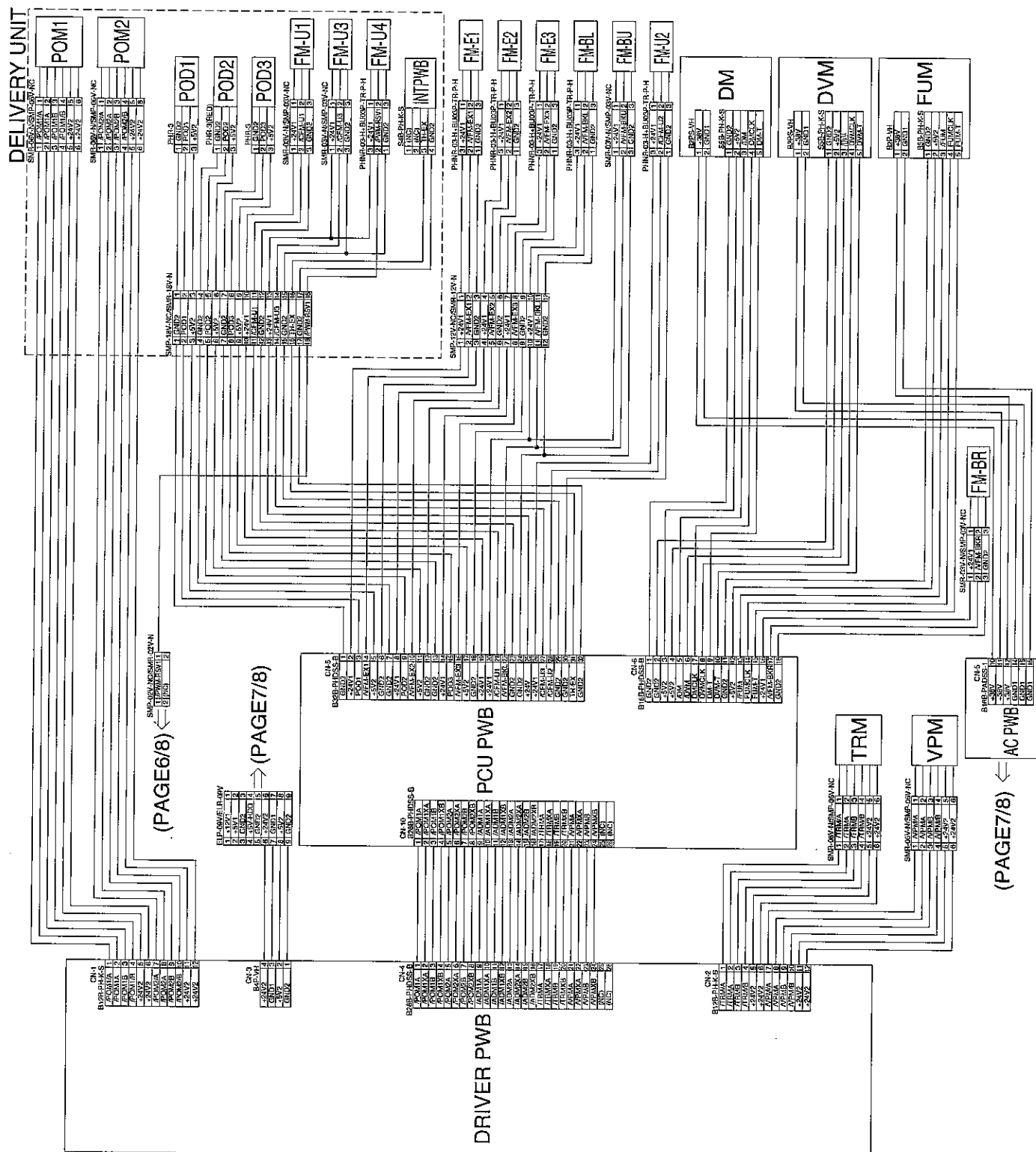
3. Actual wiring chart

A. Engine

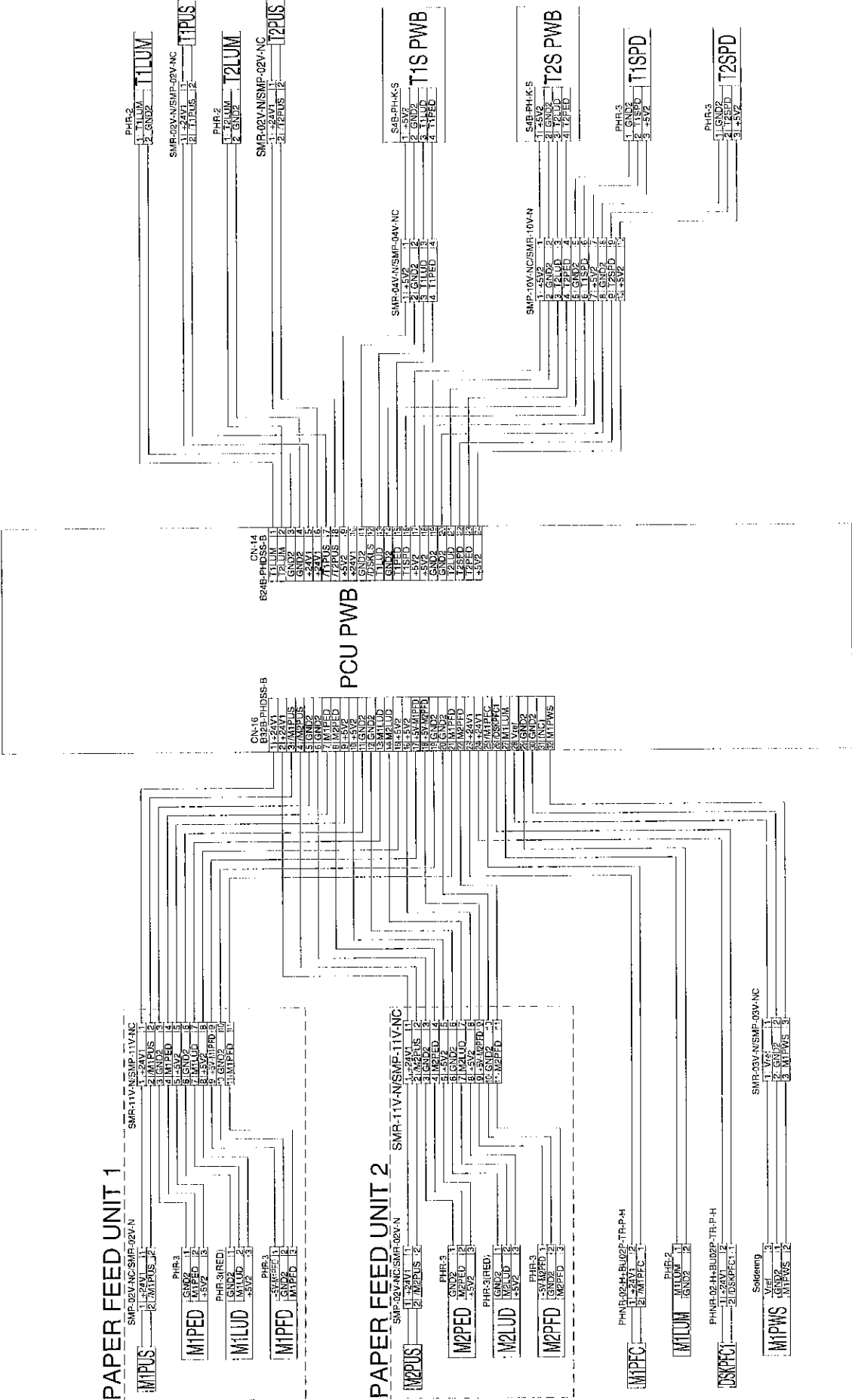
(1) IMAGE PROCESS SECTION (1/8)



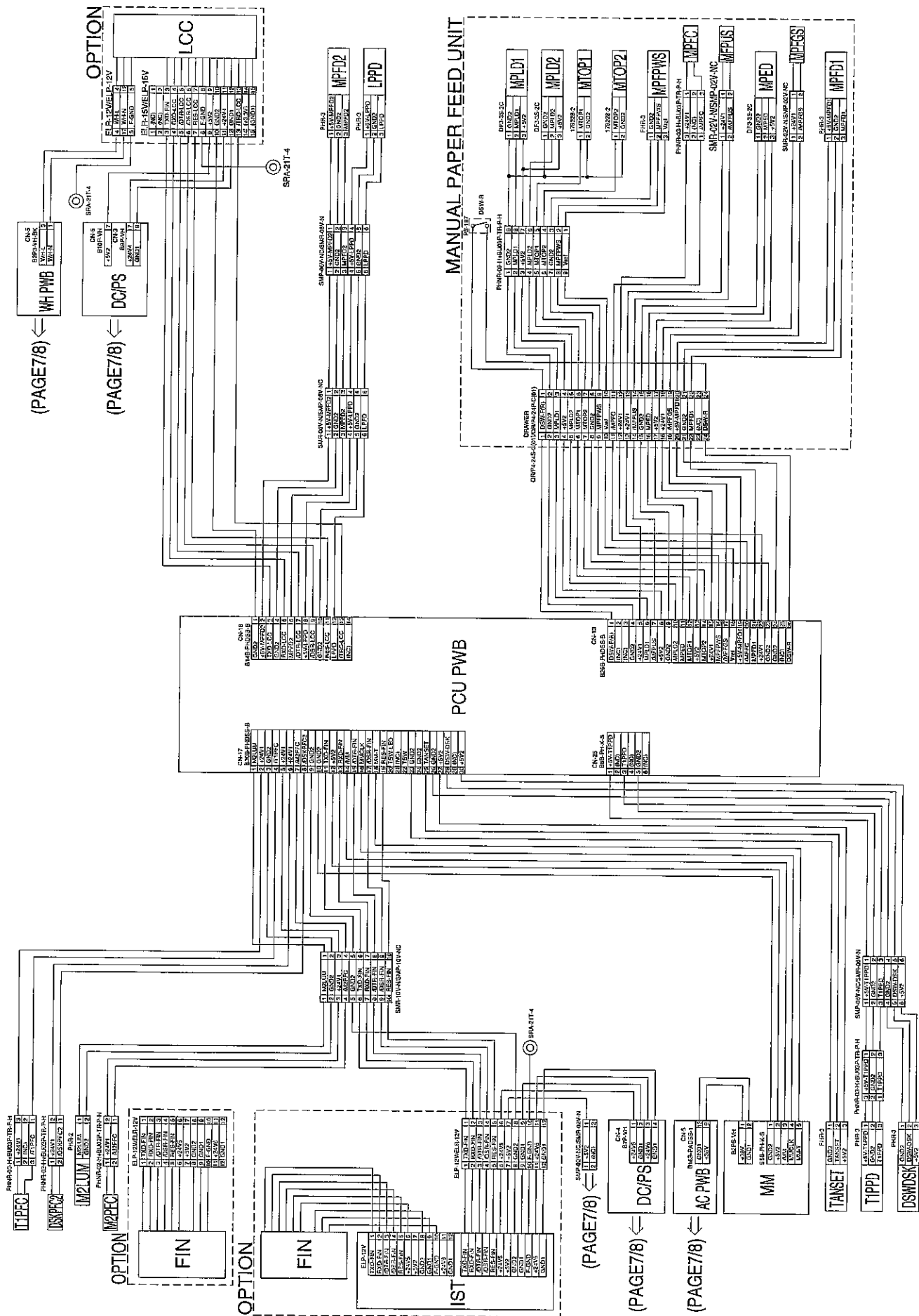
(2) PAPER TRANSPORT SECTION (2/8)



(3) PAPER TRANSPORT SECTION (3/8)

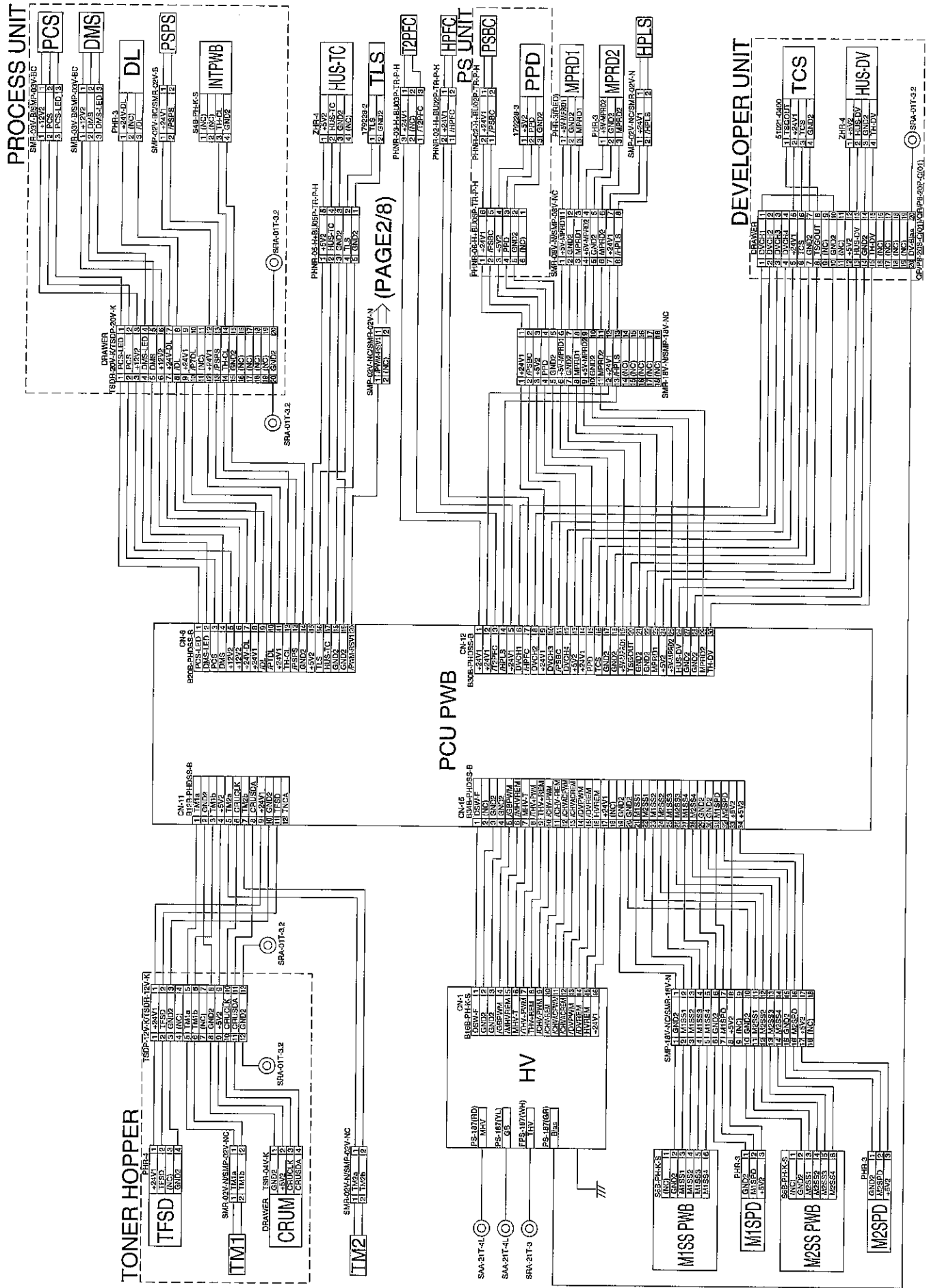


(4) TRANSPORT/OPTION SECTION (4/8)

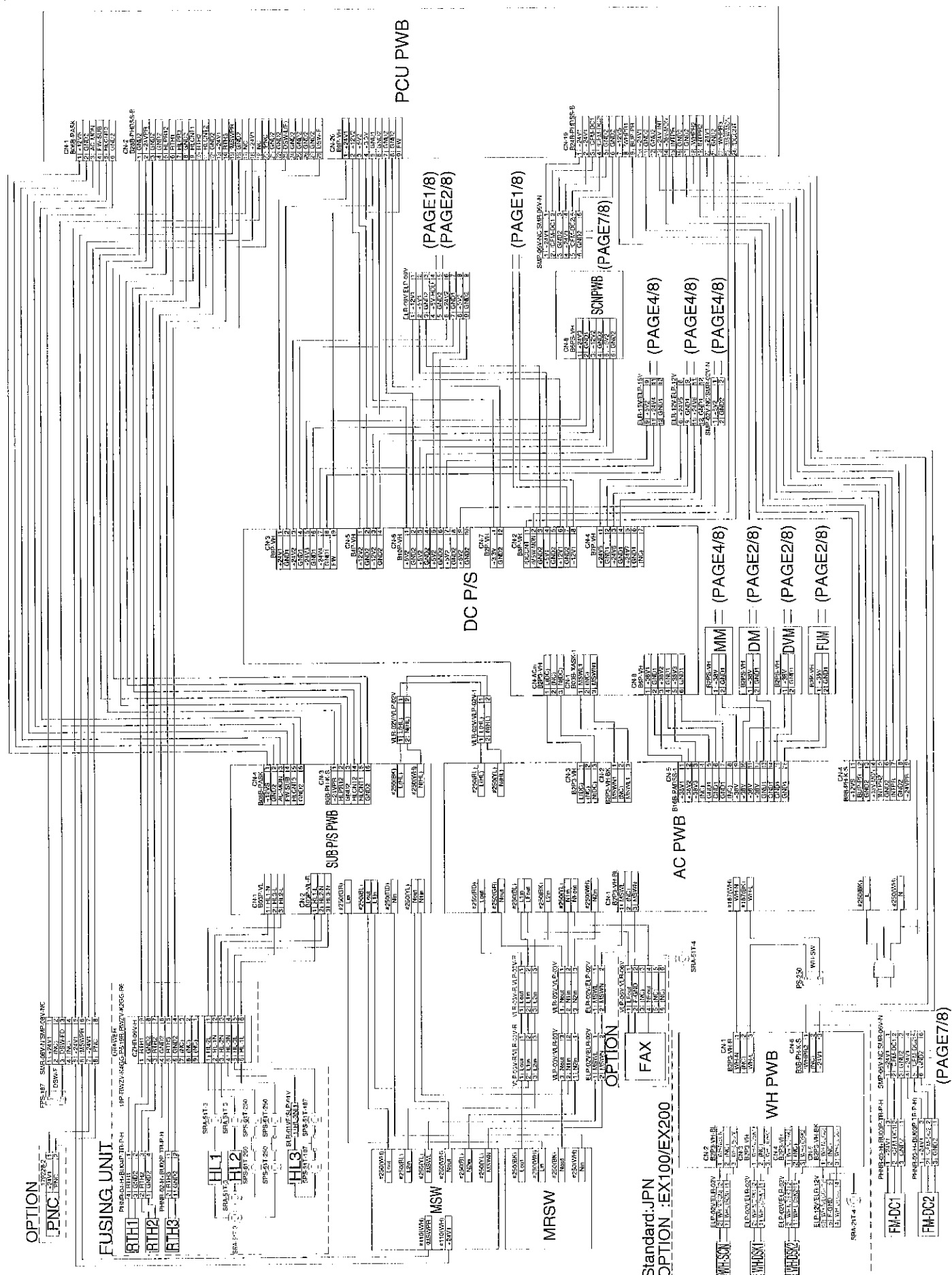




(6) PROCESS SECTION (6/8)



(7) AROUND THE POWER SUPPLY SECTION (7/8)



(8) PCU CONNECTOR LIST (8/8)

| | | | | |
|-------|----------|----|----|---------|
| GN-18 | +5V/MPD2 | 12 | 11 | GN22 |
| MPFD2 | GN22 | 4 | 3 | TXD-LCC |
| | MPFD2 | 6 | 5 | RXD-LCC |
| | +5V/LPPD | 8 | 7 | DTX-LCC |
| LPPD | GN22 | 10 | 9 | DSH-LCC |
| | LPPD | 12 | 11 | RES-LCC |
| | (NC) | 14 | 13 | TRC-LCC |

[illegible]

| | | | |
|-------|--------|-------|--------|
| 1 | +24V1 | POWER | B9P-VH |
| 2 | +12V2 | | |
| 3 | +5V2 | | |
| 4 | +3.3V1 | | |
| 5 | GND1 | | |
| 6 | GND2 | | |
| 7 | GND2 | | |
| 8 | GND2 | | |
| 9 | PW | | |
| CN-20 | | | |

| | | | | | | |
|-------|--------|---------|----|----|---------|--------------|
| CN-21 | CFM-R2 | +24V1 | 2 | 1 | +24V1 | B12B-PU05S-B |
| | | /CFM-R2 | 4 | 3 | /CFM-R1 | |
| TH-RA | CFM-R3 | GND2 | 6 | 5 | GND2 | CFM-R1 |
| | | (NC) | 8 | 7 | +24V1 | |
| | | TH-RA | 10 | 9 | /CFM-R3 | |
| | | GND2 | 12 | 11 | GND2 | |

| | | | |
|-------|-------|-------|-----|
| 4541D | 2 11 | GN02 | LSU |
| GN02 | 4 9 | GN02 | |
| PN02C | 6 5 | READY | |
| 424W | 8 7 | ISART | |
| GN02 | 12 1 | LSV2 | |
| GN02 | 14 3 | SV2 | |
| TEST2 | 16 5 | TEST | |
| GN02 | 18 7 | WRB | |
| GN02 | 20 9 | TEST3 | |
| GN02 | 22 11 | VIDEO | |
| GN02 | 24 13 | VIDEO | LSU |
| GN02 | 26 15 | LSU4 | |
| GN02 | 28 17 | LSU3 | |
| GN02 | 30 19 | LSU2 | |

| | | |
|---|------------|-------|
| 1 | +5V, T1PPD | T1PPD |
| 2 | (NC) | |
| 3 | T1PPD | |
| 4 | (NC) | |
| 5 | GND2 | |
| 6 | (NC) | |

| | | | |
|-------|--------|-------|-----------|
| GN-13 | (NC) | 2:1 | DSW-FIR2 |
| | GN22 | 4:3 | (NC) |
| | MP1-D1 | 5:5 | +24V1 |
| | -5V2 | 8:7 | MP-RUS |
| | MP1-D2 | 10:9 | GN22 |
| | MP1-D1 | 12:11 | MPED |
| | MP1-D2 | 14:13 | +5V2 |
| | MP1-D1 | 16:15 | +24V1 |
| | MP1-D2 | 18:17 | MP-CGS |
| | MP1-D1 | 20:19 | +5V MPF01 |
| | +24V1 | 22:21 | MPF01 |
| | GN22 | 24:23 | GN22 |
| | DSW-R | 26:25 | (NC) |

| CN-14 | BQ4B-PRDSS-55 | | | |
|-------|---------------|-------|-------|-------|
| | T2LUM | T2LUM | T1LUM | T1LUM |
| T2LUM | +24V1 | +24V1 | +24V1 | |
| T2PUS | +24V1 | +24V1 | +24V1 | |
| DSKLS | +24V1 | +24V1 | +24V1 | |
| T1SPD | +24V1 | +24V1 | +24V1 | |
| T2SPD | +24V1 | +24V1 | +24V1 | |

| CON-15 | B9MB-PHDSS-15 | | | | | | | | | |
|--------|---------------|------|--------|--|--|--|--|--|--|--|
| | NCI | 211 | DSW-F | | | | | | | |
| HW | GN2D | 413 | GN2D | | | | | | | |
| | MMTHRM | 1615 | TRPWRM | | | | | | | |
| | CHWTRM | 1817 | DMV-F | | | | | | | |
| | CHWTRM | 1911 | CHWTRM | | | | | | | |
| | CHWTRM | 2011 | CHWTRM | | | | | | | |
| | JOYRWM | 1413 | CHWTRM | | | | | | | |
| | HYVTRM | 1615 | JOYRWM | | | | | | | |
| | NCI | 1817 | 224V1 | | | | | | | |
| | GN2D | 2012 | GN2D | | | | | | | |
| | MSFS1 | 2241 | MSFS1 | | | | | | | |
| MSSS | MSFS2 | 2423 | MSFS2 | | | | | | | |
| | MSFS3 | 2523 | MSFS3 | | | | | | | |
| | MSFS4 | 2623 | MSFS4 | | | | | | | |
| | GN2D | 2828 | GN2D | | | | | | | |
| MSPD | MSFS2 | 3013 | MSPD | | | | | | | |
| | 2423 | 3433 | 3432 | | | | | | | |

| ZN-16 | | E32E-PHDS&S | |
|-------|--------|-------------|---------|
| M2PUS | 2-2AV1 | 2-1 | 2-2AV1 |
| M2PUS | 4-3 | 4-3 | M2PUS |
| M2PED | 5-2 | 5-2 | M2PED |
| M2PED | 6-2 | 6-2 | M2PED |
| M2PED | 4-5/2 | 4-5/2 | M2PED |
| M2PED | 5-2/2 | 5-2/2 | M2PED |
| M2PED | 12-1 | 12-1 | M2PED |
| M2PED | 14-1 | 14-1 | M2PED |
| M2PED | 15-1 | 15-1 | M2PED |
| M2PED | 16-1 | 16-1 | M2PED |
| M2PED | 17-1 | 17-1 | M2PED |
| M2PED | 18-1 | 18-1 | M2PED |
| M2PED | 19-1 | 19-1 | M2PED |
| M2PED | 20-1 | 20-1 | M2PED |
| M2PED | 21-1 | 21-1 | M2PED |
| M2PED | 22-1 | 22-1 | M2PED |
| M2PED | 23-1 | 23-1 | M2PED |
| M2PED | 24-1 | 24-1 | M2PED |
| M2PED | 25-1 | 25-1 | M2PED |
| M2PED | 26-1 | 26-1 | M2PED |
| M2PED | 27-1 | 27-1 | M2PED |
| M2PED | 28-1 | 28-1 | M2PED |
| M2PED | 29-1 | 29-1 | M2PED |
| M2PED | 30-1 | 30-1 | M2PED |
| M2PED | 31-1 | 31-1 | M2PED |
| M2PED | 32-1 | 32-1 | M2PED |
| M2PED | 33-1 | 33-1 | M2PED |
| M2PED | 34-1 | 34-1 | M2PED |
| M2PED | 35-1 | 35-1 | M2PED |
| M2PED | 36-1 | 36-1 | M2PED |
| M2PED | 37-1 | 37-1 | M2PED |
| M2PED | 38-1 | 38-1 | M2PED |
| M2PED | 39-1 | 39-1 | M2PED |
| M2PED | 40-1 | 40-1 | M2PED |
| M2PED | 41-1 | 41-1 | M2PED |
| M2PED | 42-1 | 42-1 | M2PED |
| M2PED | 43-1 | 43-1 | M2PED |
| M2PED | 44-1 | 44-1 | M2PED |
| M2PED | 45-1 | 45-1 | M2PED |
| M2PED | 46-1 | 46-1 | M2PED |
| M2PED | 47-1 | 47-1 | M2PED |
| M2PED | 48-1 | 48-1 | M2PED |
| M2PED | 49-1 | 49-1 | M2PED |
| M2PED | 50-1 | 50-1 | M2PED |
| M2PED | 51-1 | 51-1 | M2PED |
| M2PED | 52-1 | 52-1 | M2PED |
| M2PED | 53-1 | 53-1 | M2PED |
| M2PED | 54-1 | 54-1 | M2PED |
| M2PED | 55-1 | 55-1 | M2PED |
| M2PED | 56-1 | 56-1 | M2PED |
| M2PED | 57-1 | 57-1 | M2PED |
| M2PED | 58-1 | 58-1 | M2PED |
| M2PED | 59-1 | 59-1 | M2PED |
| M2PED | 60-1 | 60-1 | M2PED |
| M2PED | 61-1 | 61-1 | M2PED |
| M2PED | 62-1 | 62-1 | M2PED |
| M2PED | 63-1 | 63-1 | M2PED |
| M2PED | 64-1 | 64-1 | M2PED |
| M2PED | 65-1 | 65-1 | M2PED |
| M2PED | 66-1 | 66-1 | M2PED |
| M2PED | 67-1 | 67-1 | M2PED |
| M2PED | 68-1 | 68-1 | M2PED |
| M2PED | 69-1 | 69-1 | M2PED |
| M2PED | 70-1 | 70-1 | M2PED |
| M2PED | 71-1 | 71-1 | M2PED |
| M2PED | 72-1 | 72-1 | M2PED |
| M2PED | 73-1 | 73-1 | M2PED |
| M2PED | 74-1 | 74-1 | M2PED |
| M2PED | 75-1 | 75-1 | M2PED |
| M2PED | 76-1 | 76-1 | M2PED |
| M2PED | 77-1 | 77-1 | M2PED |
| M2PED | 78-1 | 78-1 | M2PED |
| M2PED | 79-1 | 79-1 | M2PED |
| M2PED | 80-1 | 80-1 | M2PED |
| M2PED | 81-1 | 81-1 | M2PED |
| M2PED | 82-1 | 82-1 | M2PED |
| M2PED | 83-1 | 83-1 | M2PED |
| M2PED | 84-1 | 84-1 | M2PED |
| M2PED | 85-1 | 85-1 | M2PED |
| M2PED | 86-1 | 86-1 | M2PED |
| M2PED | 87-1 | 87-1 | M2PED |
| M2PED | 88-1 | 88-1 | M2PED |
| M2PED | 89-1 | 89-1 | M2PED |
| M2PED | 90-1 | 90-1 | M2PED |
| M2PED | 91-1 | 91-1 | M2PED |
| M2PED | 92-1 | 92-1 | M2PED |
| M2PED | 93-1 | 93-1 | M2PED |
| M2PED | 94-1 | 94-1 | M2PED |
| M2PED | 95-1 | 95-1 | M2PED |
| M2PED | 96-1 | 96-1 | M2PED |
| M2PED | 97-1 | 97-1 | M2PED |
| M2PED | 98-1 | 98-1 | M2PED |
| M2PED | 99-1 | 99-1 | M2PED |
| M2PED | 100-1 | 100-1 | M2PED</ |

| IN-17 | E30B-PHIDES-3 | | | | |
|---------|---------------|-------|---------|--|------|
| T-1PC | -24V1 | 2-1 | M2LM | | |
| TSW | TPPC | 4-3 | GNDP | | M2LM |
| DSWPC2 | -24V1 | 6-5 | +24V1 | | |
| | DSWPC2 | 6-5 | GNDP | | M2PC |
| | -5V2 | 12-11 | TXSFG | | |
| | MM | 14-13 | F2D-FIN | | |
| | MM | 16-15 | F2D-FIN | | |
| | MM | 18-17 | D2B-FIN | | |
| | TSW | 22-21 | INC2 | | |
| | TSW | 24-23 | INC2 | | |
| | TSW | 26-25 | INC2 | | |
| DSW-DSK | TSW | 28-27 | INC2 | | |
| | -5V2 | 32-31 | INC1 | | |

[illegible]

| ICN-5 | DMS | PTDL | TH-CL | TLS | CFM-LA | DMS-LED 2 | 1 | PCS-LED | PCS |
|-------|-----|------|-------|-----|--------|-----------|-----|---------|-------|
| | DMS | | | | | DMS | 4 | 3 | PCS |
| | | | | | | 12V2 | 6 | 5 | 12V2 |
| | | | | | | 14V1 | 8 | 7 | 14V1 |
| | | | | | | TH-CL | 10 | 9 | TH-CL |
| | | | | | | GND2 | 12 | 11 | 24V1 |
| | | | | | | | 14 | 13 | 14V1 |
| | | | | | | | 16 | 15 | 16V1 |
| | | | | | | | 18 | 17 | 18V1 |
| | | | | | | | 20 | 19 | 20V1 |
| | | | | | | | 22 | 21 | 22V1 |
| | | | | | | | 24 | 23 | 24V1 |
| | | | | | | | 26 | 25 | 26V1 |
| | | | | | | | 28 | 27 | 28V1 |
| | | | | | | | 30 | 29 | 30V1 |
| | | | | | | | 32 | 31 | 32V1 |
| | | | | | | | 34 | 33 | 34V1 |
| | | | | | | | 36 | 35 | 36V1 |
| | | | | | | | 38 | 37 | 38V1 |
| | | | | | | | 40 | 39 | 40V1 |
| | | | | | | | 42 | 41 | 42V1 |
| | | | | | | | 44 | 43 | 44V1 |
| | | | | | | | 46 | 45 | 46V1 |
| | | | | | | | 48 | 47 | 48V1 |
| | | | | | | | 50 | 49 | 50V1 |
| | | | | | | | 52 | 51 | 52V1 |
| | | | | | | | 54 | 53 | 54V1 |
| | | | | | | | 56 | 55 | 56V1 |
| | | | | | | | 58 | 57 | 58V1 |
| | | | | | | | 60 | 59 | 60V1 |
| | | | | | | | 62 | 61 | 62V1 |
| | | | | | | | 64 | 63 | 64V1 |
| | | | | | | | 66 | 65 | 66V1 |
| | | | | | | | 68 | 67 | 68V1 |
| | | | | | | | 70 | 69 | 70V1 |
| | | | | | | | 72 | 71 | 72V1 |
| | | | | | | | 74 | 73 | 74V1 |
| | | | | | | | 76 | 75 | 76V1 |
| | | | | | | | 78 | 77 | 78V1 |
| | | | | | | | 80 | 79 | 80V1 |
| | | | | | | | 82 | 81 | 82V1 |
| | | | | | | | 84 | 83 | 84V1 |
| | | | | | | | 86 | 85 | 86V1 |
| | | | | | | | 88 | 87 | 88V1 |
| | | | | | | | 90 | 89 | 90V1 |
| | | | | | | | 92 | 91 | 92V1 |
| | | | | | | | 94 | 93 | 94V1 |
| | | | | | | | 96 | 95 | 96V1 |
| | | | | | | | 98 | 97 | 98V1 |
| | | | | | | | 100 | 99 | 100V1 |

| | +5VS | 2/11 | PROM-FAXI |
|------|----------|-------|-----------|
| MOTH | PMP-GRIT | 4/3 | /FGE |
| | FMP-POLY | 6/5 | AISW-OFF |
| | JOCENT | 8/7 | RES-PCU |
| | DTS-PCU | 10/9 | TXD-PCU |
| | GN22 | 12/11 | GN22 |
| | GNAGE | 14/13 | DNR-PCU |
| | HSVING | 18/17 | GN2-PCU |
| | GN22 | 20/19 | GN22 |
| | GN22 | 22/21 | VIDE-OUT |
| | GN22 | 24/23 | VIDEO-IN |

| PCN-10 | B&B-PHDS-5 | | | |
|--------|------------|------|-------|------|
| POM1 | POM1XA | 211 | POM1A | POM1 |
| POM2 | POM1XB | 43 | POM1B | |
| POM2 | POM2XA | 615 | POM2A | POM2 |
| POM2 | POM2XB | 817 | POM2B | |
| ADM1 | ADM1XA | 109 | ADM1A | ADM1 |
| ADM2 | ADM1XB | 1211 | ADM1B | |
| ADM2 | ADM2XA | 1413 | ADM2A | ADM2 |
| ADM2 | ADM2XB | 1615 | ADM2B | |
| TRM | TRM1XA | 1817 | TRM1A | TRM |
| TRM | TRM1XB | 2019 | TRM1B | |
| VPM | VPM1XA | 2221 | VPM1A | VPM |
| VPM | VPM1XB | 2423 | VPM1B | |
| | (NC) | 2625 | (NC) | |

| 2N-11 | | B12B-PHOSS-B | |
|-------|--------|--------------|-------|
| CRUM | GND2 | 2/1 | TM1a |
| | +5V2 | 4/3 | TM1b |
| | CRUCLK | 6/5 | TM2a |
| | CRUSDA | 8/7 | TM2b |
| TFSD | GND2 | 10/9 | +24V1 |
| TNCA | TNCA | 12/11 | TFSD |

| IN-12 | HP1.S | +24V1 | 211 | 24V1 | 8309.PH.DSS.5A |
|--------|-------|-------|------|--------|----------------|
| | HP1.S | HP1.S | 4.3 | T2PFC | T2PFC |
| | | DWCH1 | 6.5 | HPFC | HPFC |
| DW | | DWCH2 | 8.1 | HPFC | |
| | | DWCH3 | 8.1 | HPFC | |
| | | DWCH4 | 8.1 | PSBC | PSBC |
| | | +24V1 | 1418 | 5V2 | |
| | TCS | TCS | 1418 | PP1 | PPD |
| | | GN02 | 1418 | GN12 | |
| | | TSG02 | 2019 | 5V4P0U | |
| DV | | 2019 | 221 | GN72 | MPRD1 |
| | 45V | DV | 244 | GN72 | |
| | 26V7 | GN2 | 267 | GN2 | MPRD2 |
| HUS-DV | | 1H.DV | 3068 | MPH2 | |

| | |
|---|--------|
| 1 | +12VS |
| 2 | GND2 |
| 3 | AC-MON |
| 4 | FW-SUB |
| 5 | HLCNT3 |
| 6 | GND2 |

SUB P/S

| CM-2 | | R2aB-PLDSS-2 | | | |
|---------|------|--------------|---------|------|---------|
| SUB P/S | | -24VPR | 2.11 | GN02 | |
| RTH | GN02 | 4.51 | GN02 | | SUB P/S |
| | RTH1 | 6.51 | HLPR12 | | |
| | GN02 | 9.71 | HLPR18 | | |
| | RTH2 | 10.81 | HLGN11 | | |
| | GN02 | 12.11 | HLGN12 | | |
| PNC | RTH3 | 4.33 | -22V1 | | MSW |
| | GN02 | 16.18 | M/SWPH | | |
| | RTH1 | 16.71 | -25V1 | | |
| | GN02 | 22.21 | GN02 | | |
| | GN02 | 22.21 | GN02 | | |
| DSW-F | GN02 | 24.23 | DSW4(F) | | DSW-F |
| | GN02 | 26.25 | GN02 | | |
| | GN02 | 28.27 | GN02 | | |

| | | |
|------|-------|--------|
| CN-3 | | B4P-VH |
| 1 | +12V1 | HDD |
| 2 | +12V1 | |
| 3 | GND2 | |
| 4 | GND2 | |

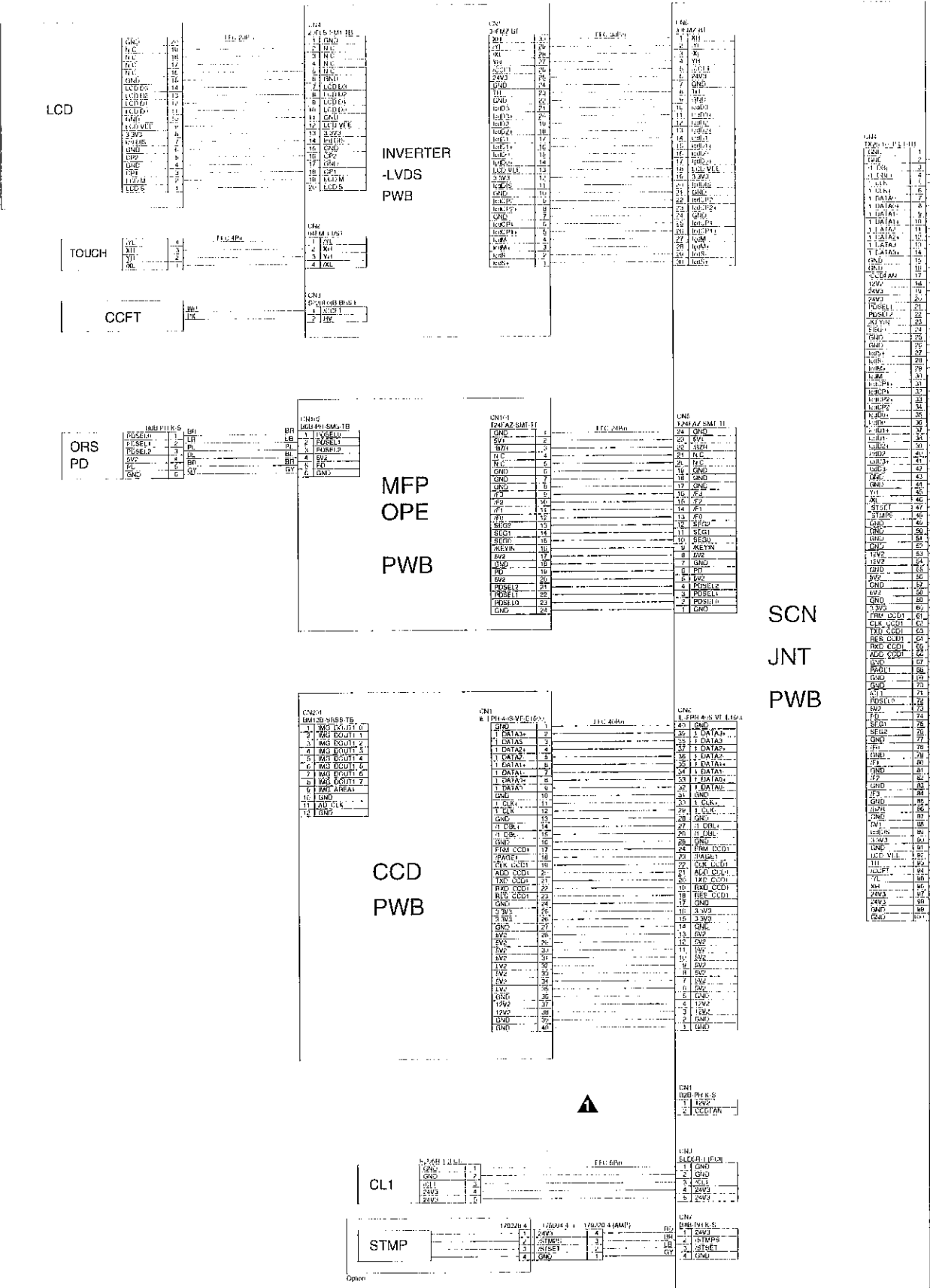
| |
|--------|
| CN-4 |
| LED3 |
| LE02 |
| LE01 |
| KV6 |
| KV5 |
| KV4 |
| KEV7 |
| KEV8 |
| KEY9 |
| OP-SET |
| GND2 |
| +SV2 |
| -SV2 |
| D7 |
| D6 |
| D5 |
| D4 |
| D3 |
| D2 |
| D1 |
| D0 |
| /OP-CS |
| /OP-RW |
| /OP-RS |

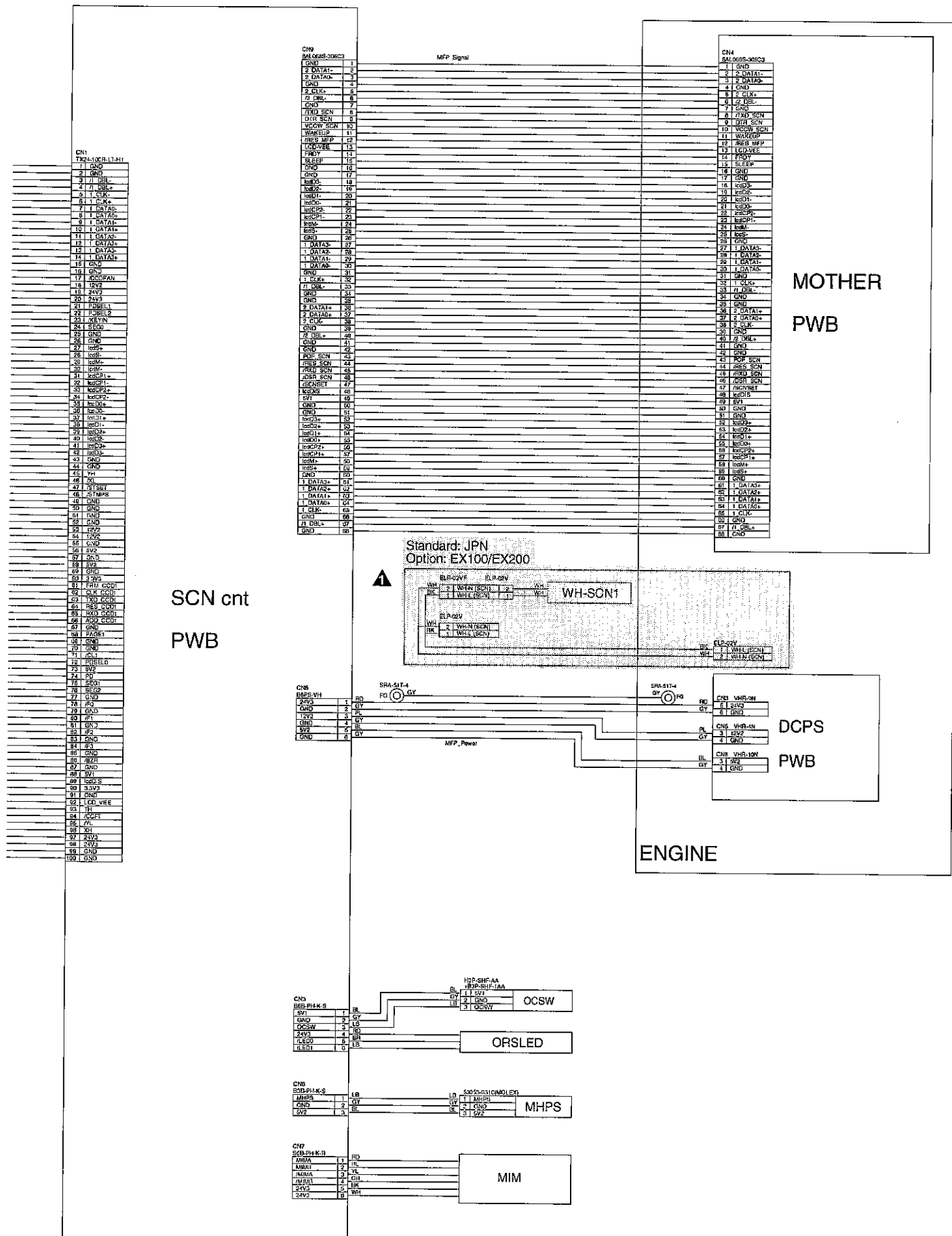
| N-5 | B2B-PHIDES-9A | | | | |
|---------|---------------|------|--------|--|--|
| | 22AV1 | 211 | GN2D2 | | |
| VFM-EX1 | AFM-EX1 | 413 | POD1 | | |
| | GN2 | 615 | POD2 | | |
| VFM-EX2 | AFM-EX2 | 1013 | POD2 | | |
| | GN2D2 | 2111 | 45V2 | | |
| VFM-EX3 | 22AV1 | 1413 | GN2D2 | | |
| | AFM-EX3 | 1813 | POD3 | | |
| | GN2 | 2013 | 45V1 | | |
| VFM-EX1 | AFM-EX1 | 2211 | CFM-11 | | |
| | GN2D2 | 2423 | GN2D2 | | |
| | 22AV1 | 2623 | 24V11 | | |
| | AFM-EX2 | 2813 | POD3 | | |
| CFM-12 | GN2D2 | 3013 | CFM-13 | | |
| THEX | GN2D2 | 3211 | THEX | | |

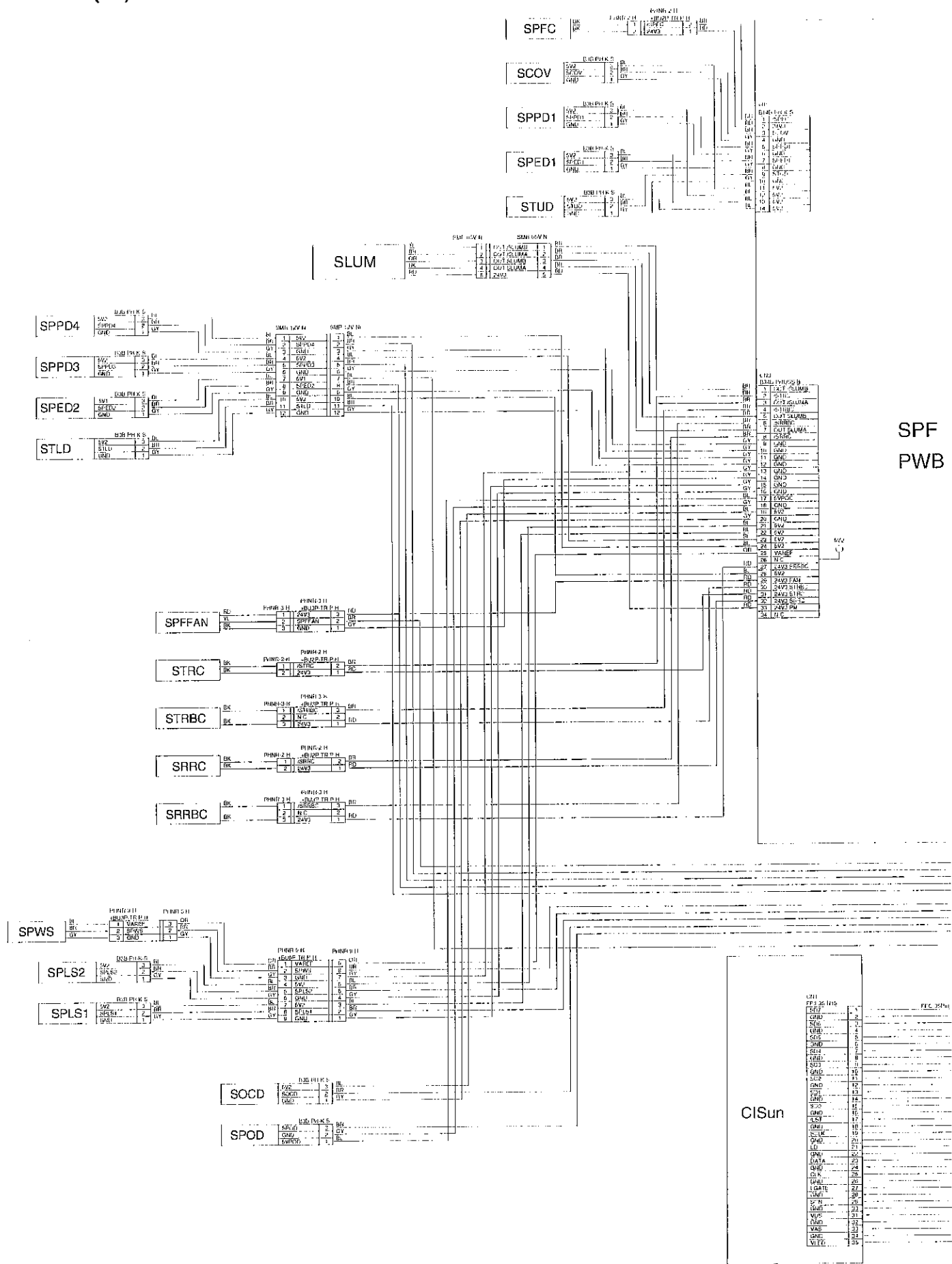
| N-6 | | B-18-B:PHDSS-B | | | |
|---------|--|----------------|-------|---------|---------|
| | | GND2 | 2 1 | GND2 | |
| DWM | | +5V2 | 4 3 | -5V2 | |
| | | /DWM | 6 5 | /DWM | DM |
| | | DV4CMLK | 9 7 | D4CMLK | |
| | | D4M-T | 10 9 | D4-T | |
| FUM | | +5V2 | 12 11 | GND2 | |
| | | F4CMLK | 14 13 | /FUM | FUM |
| VFM-BKR | | +24V1 | 16 15 | /FUM | |
| | | GND2 | 18 17 | VFM-BKR | VFM-BKR |

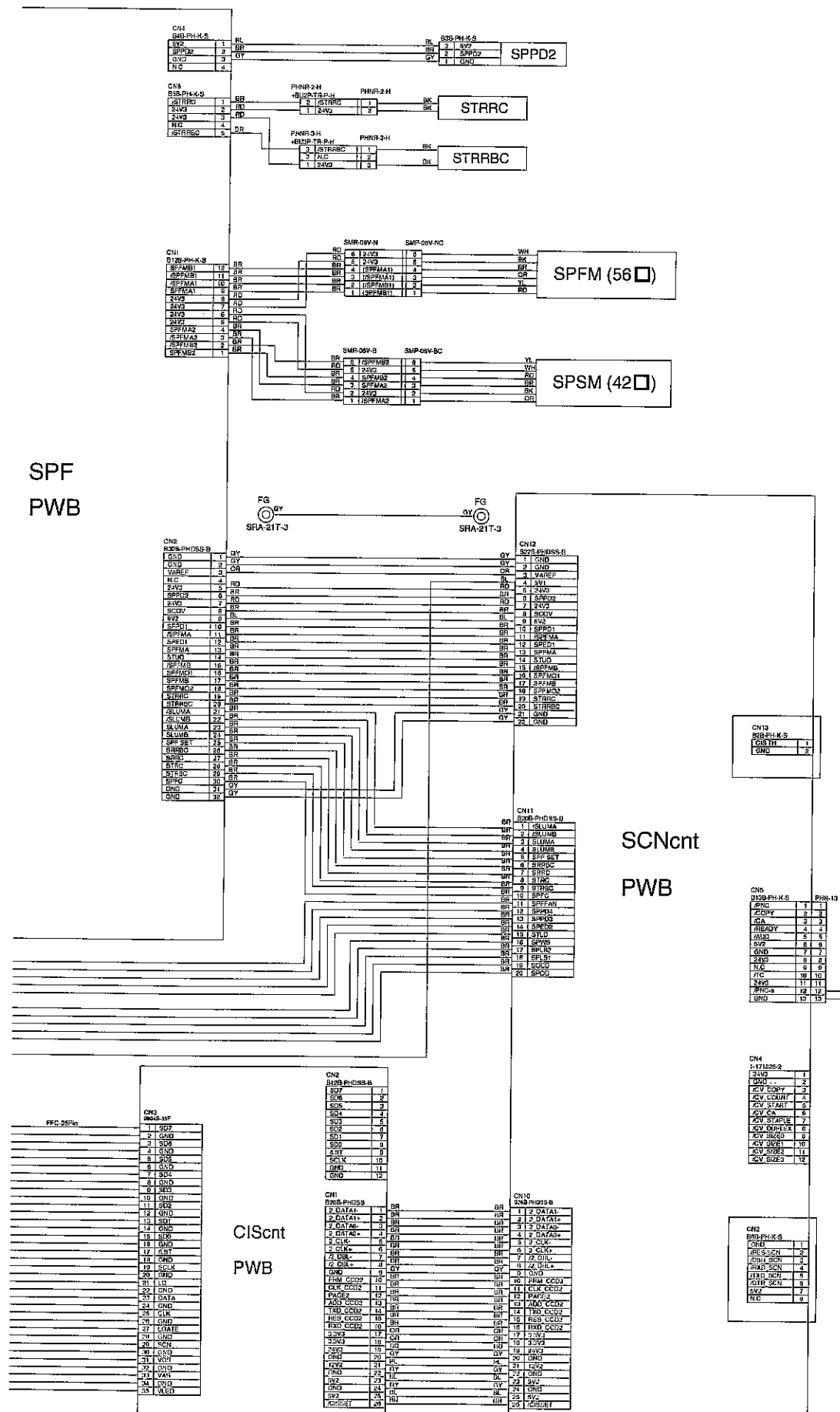
3. Scanner

SCANNER (1/2)









[14] SIGNAL NAME LIST

| Signal name | Name | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | Remark |
|-------------|--|--|-------------------|----------|---------------|---------|----------|-----------|
| | | | "L" | "H" | | | | |
| /MIMA | Scanner motor control signal (Phase /A) | Scanner motor control (Phase /A) | — | — | 7 | 3 | SCN | |
| /MIMB | Scanner motor control signal (Phase /B) | Scanner motor control (Phase /B) | — | — | 7 | 4 | SCN | |
| /SLUMB | SPF paper feed tray lift-up motor control signal (Phase /B) | SPF paper feed tray lift-up motor control (Phase /B) | — | — | 11 | 2 | SCN | |
| /SLUMA | SPF paper feed tray lift-up motor control signal (Phase /A) | SPF paper feed tray lift-up motor control (Phase /A) | — | — | 11 | 1 | SCN | |
| /SPFMA | SPF motor control signal (Phase /A) | SPF motor control (Phase /A) | — | — | 12 | 11 | SCN | |
| /SPFMB | SPF motor control signal (Phase /B) | SPF motor control (Phase /B) | — | — | 12 | 15 | SCN | |
| /VIDEO | Image data signal | Image signal to LSU (PCU output) | — | — | 22 | 23 | PCU | |
| 38VMON | 38V monitor signal | Detection of 38V for interlock | OFF | ON | 19 | 14 | PCU | |
| ACMON | AC waveform monitor signal | SUB power source AC wave high value monitor (For heater lamp ON control) (Phase control) | — | — | 1 | 3 | PCU | |
| ADD_CCD1 | CCD serial data area identification number (CCD) | Identification of address data and image data area in CCD serial data | — | — | 1 | 66 | SCN | |
| ADD_CCD2 | CIS serial data area identification number (CIS) | Identification of address data and image data area in CIS serial data | — | — | 10 | 13 | SCN | |
| ADM1A | Duplex (ADU) motor 1 (Upstream side) control signal (Phase A) | Duplex (ADU) motor 1 (Upstream) control (Phase A) | — | — | 10 | 9 | PCU | |
| ADM1B | Duplex (ADU) motor 1 (Upstream side) control signal (Phase B) | Duplex (ADU) motor 1 (Upstream) control (Phase B) | — | — | 10 | 11 | PCU | |
| ADM1XA | Duplex (ADU) motor 1 (Upstream side) control signal (Phase /A) | Duplex (ADU) motor 1 (Upstream) control (Phase /A) | — | — | 10 | 10 | PCU | |
| ADM1XB | Duplex (ADU) motor 1 (Upstream side) control signal (Phase /B) | Duplex (ADU) motor 1 (Upstream) control (Phase /B) | — | — | 10 | 12 | PCU | |
| ADM2A | Duplex (ADU) motor 2 (Downstream side) control signal (Phase A) | Duplex (ADU) motor 2 (Upstream) control (Phase A) | — | — | 10 | 13 | PCU | |
| ADM2B | Duplex (ADU) motor 2 (Downstream side) control signal (Phase B) | Duplex (ADU) motor 2 (Upstream) control (Phase B) | — | — | 10 | 15 | PCU | |
| ADM2XA | Duplex (ADU) motor 2 (Downstream side) control signal (Phase /A) | Duplex (ADU) motor 2 (Upstream) control (Phase /A) | — | — | 10 | 14 | PCU | |
| ADM2XB | Duplex (ADU) motor 2 (Downstream side) control signal (Phase /B) | Duplex (ADU) motor 2 (Upstream) control (Phase /B) | — | — | 10 | 16 | PCU | |
| AINPD | Duplex (ADU) paper entry detection signal | Duplex (ADU) paper entry detection, detection of paper exit to finisher | Paper pass | — | 7 | 28 | PCU | |
| APPD1 | Duplex (ADU) paper pass detection signal 1 | Duplex (ADU) upstream paper pass detection | Paper pass | — | 7 | 24 | PCU | |
| APPD2 | Duplex (ADU) paper pass detection signal 2 | Duplex (ADU) midstream paper pass detection | Paper pass | — | 7 | 26 | PCU | |
| ▲ AUD | Auditor installation detection signal | Auditor installation detection | Counter available | | 5 | 5 | SCN | |
| BUP-PRout | Power save mode relay signal | Selection of power save mode and normal power mode | Relay OFF | Relay ON | 19 | 9 | PCU | |
| BZR | Buzzer signal | Key touch sound buzzer signal | Ring | | 1 | 86 | SCN | |
| CA | Clear all (Auditor) signal | Clear all (Auditor) | Clear | | 5 | 3 | SCN | |
| CCDFAN | CCD fan motor control signal | CCD fan motor control | ON | | 1 | 17 | SCN | Not used. |

| Signal name | Name | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | Remark |
|-------------|--|--|--------------------|------|------------------|---------|----------|----------------------------------|
| | | | "L" | "H" | | | | |
| CCFT | Backlight control signal | Backlight control | ON | | 1 | 94 | SCN | |
| CFM-DC1 | Cooling fan motor control signal (Power source) | Power cooling fan motor control | Max. force of wind | Stop | 19 | 3 | PCU | |
| CFM-DC2 | Cooling fan motor control signal (Power source) | Power cooling fan motor control | Max. force of wind | Stop | 19 | 4 | PCU | |
| CFM-DV | Cooling fan motor control signal (Developing) | Developing cooling fan motor control | Max. force of wind | Stop | 7 | 3 | PCU | |
| CFM-R1 | Cooling fan motor control signal (LSU/Process section) | Cooling fan motor control (LSU, process section) | Max. force of wind | Stop | 21 | 3 | PCU | |
| CFM-R2 | Cooling fan motor control signal (LSU/Process section) | Cooling fan motor control (LSU, process section) | Max. force of wind | Stop | 21 | 4 | PCU | |
| CFM-R3 | Cooling fan motor control signal (LSU/Process section) | Cooling fan motor control (LSU, process section) | Max. force of wind | Stop | 21 | 9 | PCU | |
| CFM-U1 | Cooling fan motor control | Cooling fan motor control (LSU, process section) | Max. force of wind | Stop | 5 | 21 | PCU | |
| CFM-U2 | Cooling fan motor control signal (Paper exit, duplex (ADU) section) (Paper exit section rear side) | Paper exit, duplex (ADU) section cooling | Max. force of wind | Stop | 5 | 28 | PCU | |
| CFM-U3 | Cooling fan motor control signal (Paper exit, duplex (ADU) section) (Front surface) | Paper exit, duplex (ADU) section cooling | Max. force of wind | Stop | 5 | 27 | PCU | |
| CHVACPWM | High voltage control output (Separation charger) (CHV) | Separation charger AC component PWM control | — | — | 15 | 12 | PCU | |
| CHVACREM | High voltage control output (Separation charger) (CHV) | Separation charger AC component ON/OFF control | ON | OFF | 15 | 13 | PCU | |
| CHV-PWM | High voltage control output (Separation charger) (CHV) | Separation charger DC component PWM control | — | — | 15 | 10 | PCU | |
| CHV-REM | High voltage control output (Separation charger) (CHV) | Separation charger DC component ON/OFF control | ON | OFF | 15 | 11 | PCU | |
| CISSET | CIS identification signal | CIS unit installation detection | CIS available | | 10 | 26 | SCN | |
| CISTH | CIS temperature detection signal | CIS temperature detection | — | — | 13 | 1 | SCN | Not used. |
| CL1 | Scanner lamp control signal | Scanner lamp control | ON | | 1 | 71 | SCN | |
| CLK_CCD1 | CCD serial data clock signal (CCD) | CD serial data output timing control (CCD) | — | — | 1 | 62 | SCN | |
| CLK_CCD2 | CIS serial data clock signal (CIS) | CIS serial data output timing control (CIS) | — | — | 10 | 11 | SCN | |
| COPY | Copy status (Auditor) | Copy status signal (Auditor) | Copying | | 5 | 2 | SCN | |
| CRUCLK | Communication CLK | CRUM communication CLK | — | — | 11 | 6 | PCU | |
| CRUSDA | Communication data address signal | CRUM communication data address signal | — | — | 11 | 8 | PCU | |
| CV_CA | Clear all signal (Coin vendor) | Clear all (Coin vendor) | Clear | | 4 | 6 | SCN | |
| CV_COPY | Copy enable signal (Coin vendor) | Copy enable (Coin vendor) | Copy enable | | 4 | 3 | SCN | |
| CV_COUNT | Count up signal (Coin vendor) | Count-up (Coin vendor) | Count UP | | 4 | 4 | SCN | |
| CV_DUPLEX | Print count identification signal (Duplex mode) (For coin vendor) | Print count identification signal (Duplex mode) (For coin vendor) (Identification of single count or double count) | Duplex mode | | 4 | 8 | SCN | |
| CV_SIZE0 | Paper size signal 0 (Coin vendor) | Paper size 0 (Coin vendor) | | | 4 | 9 | SCN | Refer to the separate table (*2) |
| CV_SIZE1 | Paper size signal 1 (Coin vendor) | Paper size 1 (Coin vendor) | | | 4 | 10 | SCN | |
| CV_SIZE2 | Paper size signal 2 (Coin vendor) | Paper size 2 (Coin vendor) | | | 4 | 11 | SCN | |
| CV_SIZE3 | Paper size signal 3 (Coin vendor) | Paper size 3 (Coin vendor) | | | 4 | 12 | SCN | |
| CV_STAPLE | Staple mode signal (Coin vendor) | Staple mode identification (Coin vendor) | Staple mode | | 4 | 7 | SCN | |
| CV_START | Copy start signal (Coin vendor) | Copy start status (Coin vendor) | Copy start | | 4 | 5 | SCN | |
| DCCNT | DC power control signal | DC power ON/OFF | OFF | ON | 9 — 8 19 — 24 | | PCU | |

| Signal name | Name | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | Remark |
|-------------|---|---|---|--|---------------|---------|----------|--------|
| | | | "L" | "H" | | | | |
| DGS | Paper exit gate solenoid control signal | Paper exit gate control | Duplex | Simplex | 7 | 27 | PCU | |
| DL | Discharge lamp control signal | Discharge lamp control | ON | OFF | 8 | 9 | PCU | |
| DM | OPC drum motor rotating speed control signal (ON/OFF) | OPC drum motor ON/OFF | ON | OFF | 6 | 5 | PCU | |
| DMCLK | OPC drum motor rotating speed control (CLK) signal | OPC drum motor RPM control | — | — | 6 | 7 | PCU | |
| DMS | OPC drum marking sensor signal | OPC drum mark detection | — | — | 8 | 4 | PCU | |
| DMS-LED | OPC drum marking sensor LED control signal | OPC drum marking LED light quantity control | — | — | 8 | 2 | PCU | |
| DM-T | OPC drum motor lock detection signal | OPC drum motor lock detection | Rotation | Stop/Lock | 6 | 9 | PCU | |
| DSKPFC1 | Paper feed tray 3/4 paper transport clutch control signal 1 | Paper feed tray 3/4 paper transport control | Paper transport | — | 16 | 26 | PCU | |
| DSKPFC2 | Paper feed tray 3/4 paper transport clutch control signal 2 | Paper feed tray 3/4 paper transport control | Paper transport | — | 17 | 8 | PCU | |
| DSR_FIN | Serial communication control signal | Receive control | — | — | 17 | 17 | PCU | |
| DSR_LCC | Serial communication control signal | Receive control | — | — | 18 | 9 | PCU | |
| DSR_SCN | Serial I/F send enable (MFP) | Receive control | — | — | 9 | 46 | SCN | |
| DSW-ADU | Duplex (ADU) cover open/close detection signal | Duplex (ADU) cover open/close detection | Duplex (ADU) door open | Duplex (ADU) door close | 7 | 25 | PCU | |
| DSW-DSK | Left door open/close detection signal (Desk section) | Left door open/close detection (Desk section) | Desk left door open | Desk left door close | 17 | 28 | PCU | |
| DSW-F_HV | DC low voltage power (+24V) line signal for generating high voltage | High voltage power source (+24V) | — | High voltage available | 15 | 1 | PCU | |
| DSW-F | Front door open/close detection signal | Front door open/close detection | Left door open or Front door open | Left door close and Front door close | 2 | 28 | PCU | |
| DSW-L | Left door open/close detection signal | Left door open/close detection | Left door open | Left door close | 7 | 32 | PCU | |
| DSW-R | Manual feed open/close detection signal | Manual feed open/close detection | Left door open or Front door open or manual unit pull-out | Left door close and Front door close and manual unit insertion | 13 | 26 | PCU | |
| DTR_FIN | Serial communication control signal | Send control | — | — | 17 | 15 | PCU | |
| DTR_LCC | Serial communication control signal | Send control | — | — | 18 | 7 | PCU | |
| DTR_SCN | Serial I/F receive enable signal (MFP) | Send control | — | — | 9 | 9 | SCN | |
| DVCH1 | DV unit identification signal 1 | Detection of installation | | | 12 | 6 | PCU | |
| DVM | Developing motor control signal | Developing motor ON/OFF | ON | OFF | 6 | 6 | PCU | |
| DVMCLK | Developing motor rotating speed control (CLK) signal | Developing motor control RPM control | — | — | 6 | 8 | PCU | |
| DVM-T | Developing motor lock detection signal | Developing motor lock detection | Rotation | Stop/Lock | 6 | 10 | PCU | |
| DVPWM | Developing bias voltage control signal (PWM) | Developing bias PWM control | — | — | 15 | 14 | PCU | |
| DVREM | Developing bias control (ON/OFF) signal | Developing bias ON/OFF | ON | OFF | 15 | 15 | PCU | |
| F0 | Operation panel LED matrix signal 0 | Switching | — | — | 1 | 78 | SCN | |
| F1 | Operation panel LED matrix signal 1 | Switching | — | — | 1 | 80 | SCN | |

| Signal name | Name | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | Remark |
|-------------|---|---|-----------------|---------------|---------------|---------|----------|--------|
| | | | "L" | "H" | | | | |
| F2 | Operation panel LED matrix signal 2 | Switching | — | — | 1 | 82 | SCN | |
| F3 | Operation panel LED matrix signal 3 | Switching | — | — | 1 | 84 | SCN | |
| FBIAS | Fusing bias output control signal | Fusing bias output ON/OFF control | ON | OFF | 7 | 23 | PCU | |
| FRDY | FAX LED lighting signal | LED lighting control in power save mode, iFAX, FAX nighttime mode | | LED ON | 9 | 14 | SCN | |
| FRM_CCD1 | CCD image data effective area signal (CCD) | CCD image data effective area control (CCD) | — | — | 1 | 61 | SCN | |
| FRM_CCD2 | CIS image data effective area signal (CIS) | CIS image data effective area control (CIS) | — | — | 10 | 10 | SCN | |
| FUM | Fusing motor control signal | Fusing motor ON/OFF | ON | OFF | 6 | 13 | PCU | |
| FUMCLK | Fusing motor rotating speed control (CLK) signal | Fusing motor control CLK | — | — | 6 | 14 | PCU | |
| FUM-T | Fusing motor lock detection signal | Fusing motor lock detection | Rotation | Stop/Lock | 6 | 15 | PCU | |
| FW | AC power source full wave signal | Power monitor | — | — | 20 | 9 | PCU | |
| FW_SUB | Sub power source full wave signal | Sub power full wave signal | — | — | 1 | 4 | PCU | |
| FWP-PCU | Flash write protect signal | Flash write protect | — | — | 9 | 6 | PCU | |
| GBPWM | Making charger grid bias voltage (PWM) control signal | Main charger grid bias voltage (PWM) control | — | — | 15 | 5 | PCU | |
| HLCNT1 | Upper fusing roller center heater lamp control signal | Upper fusing roller center heating control | OFF | ON | 2 | 9 | PCU | |
| HLCNT2 | Upper fusing roller center heater lamp control signal | Upper fusing roller edges heating control | OFF | ON | 2 | 11 | PCU | |
| HLCNT3 | Sub heat roller heater lamp control signal | Sub heat roller heater lamp control | OFF | ON | 1 | 5 | PCU | |
| HLPRout | Fusing heater lamp power relay control signal | Fusing heater lamp power relay control | Relay OFF | Relay ON | 2 | 5 | PCU | |
| HLPRout3 | Fusing heater lamp power relay 3 control signal | Fusing heater lamp power relay 3 control | Relay OFF | Relay ON | 2 | 7 | PCU | |
| HPFC | Horizontal paper transport clutch control signal | Horizontal paper transport clutch control | Paper transport | — | 12 | 7 | PCU | |
| HPLS | Paper guide lock solenoid control signal | Paper guide lock solenoid control | Lock | — | 12 | 4 | PCU | |
| HSYNC | Horizontal sync signal | Horizontal sync | — | — | 9 | 18 | PCU | |
| HUS-DV | Developing humidity sensor | Developing section peripheral humidity detection | — | — | 12 | 26 | PCU | |
| HUS-TC | Transfer humidity sensor | Transfer section peripheral humidity detection | — | — | 8 | 17 | PCU | |
| HVREMount | High voltage control output control signal (MC/DV/TC) | High voltage ON/OFF control signal (MC/DV/TC) | OFF | ON | 15 | 16 | PCU | |
| INTPR2out | Interlock power relay "RY5" control signal | AC PWB relay "RY5" control (38V line interlock relay) | Relay OFF | Relay ON | 19 | 19 | PCU | |
| INTPRout | Interlock power relay "RY4" control signal | AC PWB relay "RY4" control (38V line interlock relay) | Relay OFF | Relay ON | 19 | 15 | PCU | |
| LDON | Laser ON/OFF control signal | Laser ON/OFF control | — | — | 22 | 27 | PCU | |
| LED0 | Document size detection LED control signal 1 | Document size detection LED control | — | — | 3 | 5 | SCN | |
| LED1 | Document size detection LED control signal 0 | Document size detection LED control | — | — | 3 | 6 | SCN | |
| LPPD | LCC paper pass detection signal | Detection of paper entry from LCC | Paper pass | — | 18 | 12 | PCU | |
| LSU_S/H | Laser beam horizontal sync signal | Laser beam horizontal position timing control | — | — | 22 | 25 | PCU | |
| M1LUD | Paper tray upper limit detection signal (Paper feed tray 3) | Paper tray upper limit detection (Paper feed tray 3) | Upper limit | — | 16 | 13 | PCU | |
| M1LUM | Lift-up motor control signal (Paper feed tray 3) | Lift-up motor control (Paper feed tray 3) | Stop | Up | 16 | 27 | PCU | |
| M1PED | Paper empty detection signal (Paper feed tray 3) | Paper empty detection (Paper feed tray 3) | Paper empty | Paper present | 16 | 7 | PCU | |

| Signal name | Name | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | Remark |
|-------------|--|---|---------------------------------|--------------------------------------|---------------|---------|----------|----------------------------------|
| | | | "L" | "H" | | | | |
| M1PFC | Paper feed clutch (M1) control signal (Paper feed tray 3) | Paper feed tray 3 paper feed control | Paper transport | — | 16 | 25 | PCU | |
| M1PFD | Paper pass detection signal (Multi paper feed tray 3) | Paper feed tray 3 paper pass detection | Paper pass | — | 16 | 21 | PCU | |
| M1PUS | Paper pickup solenoid control signal (Paper feed tray 3) | Paper pickup roller control (Paper feed tray 3) | Roller UP | Paper feed | 16 | 3 | PCU | |
| M1PWS | Paper feed tray paper width detection signal (Paper feed tray 3) | Multi paper feed tray paper width detection (Paper feed tray 3) | — | — | 16 | 32 | PCU | |
| M1SPD | Paper remaining quantity detection signal (Paper feed tray 3) | Paper remaining quantity detection (Multi paper feed tray 3) | — | Remaining paper quantity 66% or less | 15 | 31 | PCU | |
| M1SS1 | Paper size detection signal (Paper feed tray 3) | Paper size detection (Paper feed tray 3) | | | 15 | 21 | PCU | Refer to the separate table (*1) |
| M1SS2 | Paper size detection signal (Paper feed tray 3) | Paper size detection (Paper feed tray 3) | | | 15 | 23 | PCU | |
| M1SS3 | Paper size detection signal (Paper feed tray 3) | Paper size detection (Paper feed tray 3) | | | 15 | 25 | PCU | |
| M1SS4 | Paper size detection signal (Paper feed tray 3) | Paper size detection (Paper feed tray 3) | | | 15 | 27 | PCU | |
| ▲ M2LUD | Paper tray upper limit detection signal (Paper feed tray 4) | Paper tray upper limit detection (Paper feed tray 4) | — | Upper limit detection | 16 | 14 | PCU | |
| M2LUM | Lift-up motor control signal (Paper feed tray 4) | Lift-up motor control (Paper feed tray 4) | Stop | Up | 17 | 1 | PCU | |
| M2PED | Paper empty detection signal (Paper feed tray 4) | Paper empty detection (Paper feed tray 4) | Paper empty | Paper present | 16 | 8 | PCU | |
| M2PFC | Paper feed clutch (M1) control signal (Paper feed tray 4) | Paper feed tray 4 paper feed control | Paper transport | — | 17 | 7 | PCU | |
| M2PFD | Paper pass detection signal (Multi paper feed tray 4) | Paper feed tray 4 paper pass detection | Paper pass | — | 16 | 22 | PCU | |
| M2PUS | Paper pickup solenoid control signal (Paper feed tray 4) | Paper pickup roller control (Paper feed tray 4) | Roller UP | Paper feed | 16 | 4 | PCU | |
| M2SPD | Paper remaining quantity detection (Paper feed tray 4) signal | Paper remaining quantity detection (Paper feed tray 4) | — | Remaining paper quantity 66% or less | 15 | 32 | PCU | |
| M2SS1 | Paper size detection signal (Paper feed tray 4) | Paper size detection (Paper feed tray 4) | | | 15 | 22 | PCU | Refer to the separate table (*1) |
| M2SS2 | Paper size detection signal (Paper feed tray 4) | Paper size detection (Paper feed tray 4) | | | 15 | 24 | PCU | |
| M2SS3 | Paper size detection signal (Paper feed tray 4) | Paper size detection (Paper feed tray 4) | | | 15 | 26 | PCU | |
| M2SS4 | Paper size detection signal (Paper feed tray 4) | Paper size detection (Paper feed tray 4) | | | 15 | 28 | PCU | |
| MFPUS | Paper pickup solenoid (MFP) control signal (Manual paper feed) | Paper pickup solenoid (MPF) control (Manual paper feed) | Paper feed with the roller down | — | 13 | 7 | PCU | |
| MHPS | Scanner home position sensor signal | Scanner home position detection | | Home position | 6 | 1 | SCN | |
| MHVREM | Main charger control signal | Main charger ON/OFF | ON | OFF | 15 | 6 | PCU | |
| MHV-T | Main charger trouble detection signal | Main charger trouble detection | Trouble, no MHV | Normal | 15 | 7 | PCU | |
| MIMA | Scanner motor control signal (Phase A) | Scanner motor control (Phase A) | — | — | 7 | 1 | SCN | |
| MIMB | Scanner motor control signal (Phase B) | Scanner motor control (Phase B) | — | — | 7 | 2 | SCN | |
| MM | Main motor control signal | Main motor ON/OFF control | ON | OFF | 17 | 14 | PCU | |
| MMCLK | Main motor rotating speed control (CLK) signal | Main motor RPM control | — | — | 17 | 16 | PCU | |
| MM-T | Main motor lock detection signal | Main motor lock detection | Rotation | Stop/Lock | 17 | 18 | PCU | |
| ▲ MPED | Manual feed paper empty detection signal | Manual paper feed tray paper empty detection | Paper present | Paper empty | 13 | 11 | PCU | |

| Signal name | Name | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | Remark |
|-------------|--|---|-------------------|---------------|---------------|---------|----------|--------|
| | | | "L" | "H" | | | | |
| MPFC | Paper feed clutch control signal (Manual feed) | Manual feed tray paper feed roller control | Paper feed | — | 13 | 20 | PCU | |
| MPFD1 | Manual feed paper pass detection signal 1 | Manual tray paper pass detection | — | Paper pass | 13 | 21 | PCU | |
| ▲ MPFD2 | Manual feed paper pass detection signal 2 | Manual tray and LCC paper pass detection | Paper pass | — | 18 | 6 | PCU | |
| MPFGS | Manual feed gate solenoid control signal | Manual feed gate control | Paper pass enable | Stopper | 13 | 17 | PCU | |
| MPFPWS | Manual feed paper width detection signal | Manual feed paper width detection | — | — | 13 | 16 | PCU | |
| MPLD1 | Manual feed paper length detection signal 1 | Manual paper feed tray paper length detection (Short) | — | Paper present | 13 | 6 | PCU | |
| MPLD2 | Manual feed paper length detection signal 1 | Manual paper feed tray paper length detection (Long) | — | Paper present | 13 | 10 | PCU | |
| ▲ MPRD1 | Paper feed tray 2 paper pass detection signal 1 | Manual feed/paper feed tray 2/ LCC paper pass detection | Paper pass | — | 12 | 23 | PCU | |
| ▲ MPRD2 | Paper feed tray 2 paper pass detection signal 2 | Manual feed/paper feed tray 2/ LCC paper pass detection | Paper pass | — | 12 | 29 | PCU | |
| MSWMON | MSW monitor signal | Main switch monitor | — | — | 19 | 23 | PCU | |
| MSWOFF | MSW OFF signal | Main switch OFF signal | — | — | 9 | 5 | PCU | |
| MSWPR | Main switch power relay control signal | Main switch power relay control | Relay ON | Relay OFF | 2 | 15 | PCU | |
| MTOP1 | Manual tray pull-out position detection signal 1 | Manual paper feed tray pull-out position detection (Storing position) | Store | — | 13 | 12 | PCU | |
| MTOP2 | Manual tray pull-out position detection signal 2 | Manual paper feed tray pull-out position detection (Pull-out position) | Pull out | — | 13 | 14 | PCU | |
| OCSW | SPF open/close detection signal | Document size detection trigger | Close | — | 3 | 3 | SCN | |
| PAGE | Page signal | Print timing control for controller (Output for every page) | — | — | 9 | 14 | PCU | |
| PAGE1 | Image effective area signal (CCD) | Indicates image data area of one page. (CCD) | — | — | 1 | 68 | SCN | |
| PAGE2 | Image effective area signal (CIS) | Indicates image data area of one page. (CIS) | — | — | 10 | 12 | SCN | |
| PCS | Image density sensor signal | Detection of density of toner patch on the OPC drum | — | — | 8 | 3 | PCU | |
| PCS-LED | Image density sensor LED current control signal | Image density sensor LED light emitting quantity control | — | — | 8 | 1 | PCU | |
| PCU_DSR | Serial communication control signal | Send control signal (Serial communication) | — | — | 9 | 13 | PCU | |
| PCU_DTR | Serial communication control signal | Receive control signal (Serial communication) | — | — | 9 | 10 | PCU | |
| PCU_RES | PCU reset signal | PCU reset by the controller | Operation enable | Reset | 9 | 7 | PCU | |
| PCU_RXD | Serial communication send data signal | Send data to the controller | — | — | 9 | 17 | PCU | |
| PCU_TXD | Serial communication receive data signal | Receive data from the controller | — | — | 9 | 9 | PCU | |
| PD | Document size detection signal | OC document size detection analog signal | — | — | 1 | 74 | SCN | |
| PDSEL0 | Document detection select signal 0 | Document size detection signal select | — | — | 1 | 72 | SCN | |
| PDSEL1 | Document detection select signal 1 | Document size detection signal select | — | — | 1 | 21 | SCN | |
| PDSEL2 | Document detection select signal 2 | Document size detection signal select | — | — | 1 | 22 | SCN | |
| ▲ PFD2 | Paper pass detection signal 2 | Paper pass detection (Left door unit) from duplex (ADU)/No. 1, 3, 4 paper feed tray | Paper pass | — | 7 | 10 | PCU | |
| PGMCLK | LSU motor RPM control signal (CLK) | LSU motor RPM control | — | — | 22 | 6 | PCU | |
| PNC | Count-up signal (Auditor) | Count up (Auditor) | Count UP | — | 5 | 1 | SCN | |

| Signal name | Name | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | Remark |
|-------------|---|--|-----------------------|-----------------------------|---------------|---------|----------|--------|
| | | | "L" | "H" | | | | |
| PNC-a | Count-up signal (Personal counter) | Count up (Personal counter) | | | 2 | 20 | PCU | |
| POD1 | Paper exit detection 1 signal | Paper exit detection from fusing | Paper pass | — | 5 | 3 | PCU | |
| POD2 | Paper exit detection 2 signal | Paper pass detection from paper exit | Paper pass | — | 5 | 9 | PCU | |
| ▲ POD3 | Paper exit detection 3 signal | Paper exit detection to upper section paper exit tray (Full detection) | — | Paper pass (Full detection) | 5 | 15 | PCU | |
| POF | Power OFF status signal | Power OFF status | Power OFF | Power ON | 9 | 3 | PCU | |
| POF_SCN | Power off signal | Power OFF status signal (Output from PCU) | Power OFF | | 9 | 43 | SCN | |
| POM1A | Paper exit motor 1 (Fusing side) control signal (Phase A) | Paper exit unit (Fusing side) paper transport | — | — | 10 | 1 | PCU | |
| POM1B | Paper exit motor 1 (Fusing side) control signal (Phase B) | Paper exit unit (Fusing side) paper transport | — | — | 10 | 3 | PCU | |
| POM1XA | Paper exit motor 1 (Fusing side) control signal (Phase /A) | Paper exit unit (Fusing side) paper transport | — | — | 10 | 2 | PCU | |
| POM1XB | Paper exit motor 1 (Fusing side) control signal (Phase /B) | Paper exit unit (Fusing side) paper transport | — | — | 10 | 4 | PCU | |
| POM2A | Paper exit motor 2 (Paper exit side) control signal (Phase A) | Paper exit unit (paper exit side) paper transport | — | — | 10 | 5 | PCU | |
| POM2B | Paper exit motor 2 (Fusing side) control signal (Phase B) | Paper exit unit (paper exit side) paper transport | — | — | 10 | 7 | PCU | |
| POM2XA | Paper exit motor 2 (Fusing side) control signal (Phase /A) | Paper exit unit (paper exit side) paper transport | — | — | 10 | 6 | PCU | |
| POM2XB | Paper exit motor 2 (Fusing side) control signal (Phase /B) | Paper exit unit (Paper exit side) paper transport | — | — | 10 | 8 | PCU | |
| PPD | Resist roller front paper pass detection signal | Paper pass detection in front of resist roller | Paper pass | — | 12 | 15 | PCU | |
| PROFF_CNT | BUP-PR control signal (Main power OFF signal) | Main power OFF signal (output from controller) | — | End | 9 | 4 | PCU | |
| PRON_FAX | BUP-PR control signal (Main power ON signal) | Main power ON signal (Output front FAX unit) | Boot | — | 9 | 1 | PCU | |
| PSBC | Resist roller brake clutch control signal | Resist roller brake clutch control | — | Paper transport enable | 12 | 11 | PCU | |
| PSPS | Separation solenoid control signal | Separation solenoid control | Separation | — | 8 | 13 | PCU | |
| ▲ PWM-RSV1 | Cooling fan motor control signal (Paper exit, duplex (ADU) section (Top surface)) | Paper exit, duplex (ADU) section cooling | Max. blowing capacity | Stop | 8 | 20 | PCU | |
| READY | LSU motor lock detection signal | LSU motor lock detection | Rotation | Stop/Lock | 22 | 5 | PCU | |
| READY | Copy enable signal (Auditor) | Copy enable (Auditor) | Copy enable | | 5 | 4 | SCN | |
| ▲ RES_CCD1 | Reset signal (CCD) | Reset (CCD) | | Reset | 1 | 64 | SCN | |
| ▲ RES_CCD2 | Reset signal (CIS) | Reset (CIS) | | Reset | 10 | 15 | SCN | |
| RES_FIN | Finisher reset signal | Finisher reset | Operation enable | Reset | 17 | 19 | PCU | |
| RES_LCC | LCC reset signal | LCC reset | Operation enable | Reset | 18 | 11 | PCU | |
| RES_MFP | Main unit reset signal (MFP) | Not used. | Reset | | 9 | 12 | SCN | |
| RES_SCN | Scanner reset signal | Scanner reset (output from controller) | Reset | | 9 | 44 | SCN | |
| RRC | Resist roller clutch control signal | Resist roller clutch control (The relative position of print image and paper is controlled.) | Paper transport | — | 7 | 4 | PCU | |
| ▲ RTH1 | Heat roller temperature detection signal | Heat roller temperature detection (Center section) | — | — | 2 | 6 | PCU | |
| ▲ RTH2 | Pressure roller temperature detection signal | Pressure roller temperature detection (Edge section) | — | — | 2 | 10 | PCU | |
| RTH3 | Sub heat roller temperature detection signal | Sub heat roller temperature detection | — | — | 2 | 14 | PCU | |

| Signal name | Name | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | Remark |
|-------------|--|---|-------------------|---------------|---------------|---------|----------|--------|
| | | | "L" | "H" | | | | |
| RXD_CCD1 | Serial I/F data (CCD) | Serial I/F data (CCD-scanner control PWB) | — | — | 1 | 65 | SCN | |
| RXD_CCD2 | Serial I/F data (CIS) | Serial I/F data (CCD-scanner control PWB) | — | — | 10 | 16 | SCN | |
| RXD_FIN | Serial I/F data (FINISHER) | Serial I/F data (Finisher-PCU PWB) | — | — | 17 | 13 | PCU | |
| RXD_LCC | Serial I/F data (LCC) | Serial I/F data (LCC-PCU PWB) | — | — | 18 | 5 | PCU | |
| RXD_SCN | Serial I/F data (Scanner control PWB) | Serial I/F data (Scanner control PWB - Controller) | — | — | 9 | 45 | SCN | |
| SCNSET | Scanner control PWB identification signal | Scanner control PWB installation detection | Scanner available | | 9 | 47 | SCN | |
| SCOV | SPF cover switch signal | SPF cover open/close detection | | Close | 12 | 8 | SCN | |
| SEG0 | Operation panel LED matrix signal 0 | Operation panel LED matrix | — | — | 1 | 24 | SCN | |
| SEG1 | Operation panel LED matrix signal 1 | Operation panel LED matrix | — | — | 1 | 75 | SCN | |
| SEG2 | Operation panel LED matrix signal 2 | Operation panel LED matrix | — | — | 1 | 76 | SCN | |
| SLEEP | Energy-saving mode display signal | LED lighting signal in energy saving mode | | LED ON | 9 | 15 | SCN | |
| SLUMA | SPF tray lift-up motor control signal (Phase A) | SPF tray lift-up motor control (Phase A) | — | — | 11 | 3 | SCN | |
| SLUMB | SPF tray lift-up motor control signal (Phase B) | SPF tray lift-up motor control (Phase B) | — | — | 11 | 4 | SCN | |
| SOCD | SPF open/close detection signal | SPF open/close detection | | Close | 11 | 19 | SCN | |
| SPED1 | SPF document empty detection signal | SPF document empty detection | Paper present | | 12 | 12 | SCN | |
| SPED2 | SPF document detection signal | SPF document detection | Paper present | | 11 | 14 | SCN | |
| SPFC | SPF paper feed clutch control signal | SPF paper feed clutch control | | ON | 11 | 10 | SCN | |
| SPFFAN | SPF fan motor control signal | SPF fan motor control | ON | | 11 | 11 | SCN | |
| SPFMA | SPF paper feed, paper transport motor control signal (Phase A) | SPF paper feed, paper transport motor control (Phase A) | — | — | 12 | 13 | SCN | |
| SPFMB | SPF paper feed, paper transport signal (Phase B) | SPF paper feed, paper transport motor control (Phase B) | — | — | 12 | 17 | SCN | |
| SPFMO1 | SPF paper feed, paper transport motor current control signal 1 | SPF paper feed, paper transport motor current control | Power down | | 12 | 16 | SCN | |
| SPFMO2 | SPF paper feed, paper exit motor current control signal 2 | SPF paper feed, paper transport motor current control | Power down | | 12 | 18 | SCN | |
| SPFSET | SPF identification signal | SPF installation detection | SPF available | | 11 | 5 | SCN | |
| SPLS1 | SPF document length detection signal 1 | SPF document length detection (Short) | | Paper present | 11 | 18 | SCN | |
| SPLS2 | SPF document length detection signal 2 | SPF document length detection (Long) | | Paper present | 11 | 17 | SCN | |
| SPOD | SPF paper exit detection signal | SPF paper exit detection | Paper exit | | 11 | 20 | SCN | |
| SPPD1 | SPF document paper pass detection 1 signal | SPF document paper pass detection 1 | Paper present | | 12 | 10 | SCN | |
| SPPD2 | SPF document paper pass detection 2 signal | SPF document paper pass detection 2 | Paper present | | 12 | 6 | SCN | |
| SPPD3 | SPF document paper pass detection 3 signal | SPF document paper pass detection 3 | Paper present | | 11 | 13 | SCN | |
| SPPD4 | SPF document paper pass detection 4 signal | SPF document paper pass detection 4 | Paper present | | 11 | 12 | SCN | |
| SPWS | SPF document size (Width) detection analog data signal | SPF document size (Width) detection | — | — | 11 | 16 | SCN | |
| SRRBC | SPF resist roller brake clutch control signal | SPF resist roller brake clutch control | | ON | 11 | 6 | SCN | |

| Signal name | Name | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | Remark |
|-------------|--|--|--------------------------|--------------------------------------|---------------|---------|----------|--------|
| | | | "L" | "H" | | | | |
| SRRC | SPF resist roller clutch control signal | SPF resist roller clutch control | | ON | 11 | 7 | SCN | |
| START | LSU motor control signal | LSU motor ON/OFF | ON | OFF | 22 | 7 | PCU | |
| STLD | SPF document tray lower limit detection signal | SPF document tray lower limit detection | | Lower limit | 11 | 15 | SCN | |
| STMPS | Stamp solenoid control signal | Stamp solenoid control | | Stamp ON | 1 | 48 | SCN | |
| STRBC | SPF paper transport clutch control signal | SPF paper transport roller brake clutch control | | ON | 11 | 9 | SCN | |
| STRC | SPF paper transport clutch control signal | SPF paper transport clutch control | | ON | 11 | 8 | SCN | |
| STRRBC | SPF paper transport resist brake clutch control signal | SPF paper transport resist brake clutch control | | ON | 12 | 20 | SCN | |
| STRRC | SPF paper transport resist clutch control signal | SPF paper transport resist clutch control | | ON | 12 | 19 | SCN | |
| STSET | Stamp identification signal | Stamp Yes/No detection | Stamp available | | 1 | 47 | SCN | |
| STUD | SPF document tray upper limit detection signal | SPF document tray upper limit detection | | Upper limit | 12 | 14 | SCN | |
| SYNC | LSU horizontal sync detection signal | LSU horizontal sync detection (BD sensor signal) | — | — | 22 | 29 | PCU | |
| T1LUD | Paper feed tray upper limit detection signal (Paper feed tray 1) | Paper feed tray upper limit (Paper feed tray 1) | Upper limit | — | 14 | 13 | PCU | |
| T1LUM | Paper tray lift-up motor control signal (Paper feed tray 1) | Paper tray lift-up control (Paper feed tray 1) | Stop | Up | 14 | 1 | PCU | |
| T1PED | Paper empty detection signal (Paper feed tray 1) | Paper presence detection (Paper feed tray 1) | Paper empty | Paper present | 14 | 15 | PCU | |
| T1PFC | Paper feed clutch control signal (Paper feed tray 1) | Paper feed clutch control (Paper feed tray 1) | Paper transport | — | 17 | 4 | PCU | |
| T1PPD | Paper pass detection signal (Paper feed tray 1) | Paper pass detection from paper feed tray 1 | Paper pass | — | 25 | 3 | PCU | |
| T1PUS | Paper pick-up solenoid control signal (Paper feed tray 1) | Paper pickup solenoid control (Paper feed tray 1) | Roller UP | Paper feed | 14 | 7 | PCU | |
| T1SPD | Paper remaining quantity detection signal (Paper feed tray 1) | Paper remaining quantity detection (Paper feed tray 1) | — | Remaining paper quantity 66% or less | 14 | 16 | PCU | |
| T2LUD | Paper tray upper limit detection signal (Paper feed tray 2) | Paper tray upper limit detection (Paper feed tray 2) | Upper limit | — | 14 | 21 | PCU | |
| T2LUM | Paper tray lift-up motor control signal (Paper feed tray 2) | Paper tray lift-up motor control (Paper feed tray 2) | Stop | Up | 14 | 2 | PCU | |
| T2PED | Paper empty detection signal (Paper feed tray 2) | Paper presence detection (Paper feed tray 2) | Paper empty | Paper present | 14 | 23 | PCU | |
| T2PFC | Paper clutch control signal (Paper feed tray 2) | Paper feed clutch control (Paper feed tray 2) | Paper transport | — | 12 | 3 | PCU | |
| T2PUS | Paper pickup solenoid control signal (Paper feed tray 2) | Paper pickup solenoid control (Paper feed tray 2) | The roller lifts up. | Paper feed | 14 | 8 | PCU | |
| T2SPD | Paper remaining quantity detection signal (Paper feed tray 2) | Paper remaining quantity detection (Paper feed tray 2) | — | Remaining paper quantity 66% or less | 14 | 22 | PCU | |
| TANSET | Paper feed tray 1/2 (Tandem tray) detection signal | Paper feed tray 1, 2 (Tandem tray) insertion detection | Pull out | Insert | 17 | 25 | PCU | |
| TCBIAS | Transfer belt cleaning output control signal (ON/OFF) | Transfer belt cleaning bias ON/OFF control | ON | OFF | 7 | 22 | PCU | |
| TCBPWM | Transfer belt cleaning output control signal (PWM) | Transfer belt cleaning bias output voltage PWM control | — | — | 7 | 18 | PCU | |
| TCS | Toner density detection signal | Toner density detection | — | — | 12 | 16 | PCU | |
| TFSD | Toner remaining quantity detection signal | Toner hopper remaining quantity detection | Remaining quantity large | Remaining quantity small | 11 | 11 | PCU | |
| ▲ TH | LCD temperature sensor signal | LCD temperature detection | — | — | 1 | 93 | SCN | |
| TH-CL | OPC drum cleaner temperature sensor signal | OPC drum cleaner peripheral temperature detection | — | — | 8 | 12 | PCU | |

| Signal name | Name | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | Remark |
|-------------|---|---|--------------------|-----------------|---------------|---------|----------|-----------|
| | | | "L" | "H" | | | | |
| TH-DV | Developing humidity detection signal | Developing section humidity detection | — | — | 12 | 30 | PCU | |
| TH-EX | Paper exit unit temperature sensor | Paper exit unit peripheral temperature detection | — | — | 5 | 31 | PCU | |
| THPS1 | Transfer belt contact/separation home position sensor 1 | Transfer belt separation home position detection 1 | — | Contact | 7 | 6 | PCU | Not used. |
| THPS2 | Transfer belt contact/separation home position sensor 2 | Transfer belt separation home position detection 2 | — | Contact | 7 | 14 | PCU | |
| TH-RA | Machine temperature detection signal | Machine temperature detection | — | — | 21 | 10 | PCU | |
| THV+PWM | Transfer charger output control signal (THV) | Transfer charger output control (PWM control) | — | — | 15 | 8 | PCU | |
| THV+REM | Transfer charger control signal (THV) | Transfer charger ON/OFF control | ON | OFF | 15 | 9 | PCU | |
| TLS | Waste toner pipe lock detection signal | Waste toner pipe lock detection | — | Lock (Tilt) | 8 | 16 | PCU | |
| TM1A | Toner motor 1 control signal | Toner motor 1 ON/OFF control | — | — | 11 | 1 | PCU | |
| TM1B | Toner motor 1 control signal | Toner motor 1 ON/OFF control | — | — | 11 | 3 | PCU | |
| TM2A | Toner motor 2 control signal | Toner motor 2 ON/OFF control | — | — | 11 | 5 | PCU | |
| TM2B | Toner motor 2 control signal | Toner motor 2 ON/OFF control | — | — | 11 | 7 | PCU | |
| TNCA | Waste toner full detection signal | Waste toner full detection | — | — | 11 | 12 | PCU | Not used. |
| TRC_LCC | LCC paper feed timing signal | LCC paper feed timing control (Output from PCU) | — | — | 18 | 13 | PCU | |
| TRMA | Transfer roller 15 drive motor control signal (Phase A) | Transport roller 15 drive motor control | — | — | 10 | 17 | PCU | |
| TRMB | Transfer roller 15 drive motor control signal (Phase B) | Transport roller 15 drive motor control | — | — | 10 | 19 | PCU | |
| TRMXA | Transfer roller 15 drive motor control signal (Phase /A) | Transport roller 15 drive motor control | — | — | 10 | 18 | PCU | |
| TRMXB | Transfer roller 15 drive motor control signal (Phase /B) | Transport roller 15 drive motor control | — | — | 10 | 20 | PCU | |
| TSGOUT | Toner den misty sensor gain control signal | Toner density sensor gain control | — | — | 12 | 20 | PCU | |
| TURM | Transfer separation motor control signal | Transfer unit separation control | Stop | Contact/Release | 7 | 16 | PCU | |
| TXD_CCD1 | Serial I/F data (CCD) | Serial I/F data (Scanner control PWB - CCD) | — | — | 1 | 63 | SCN | |
| TXD_CCD2 | Serial I/F data (CCD) | Serial I/F data (Scanner control PWB - CCD) | — | — | 10 | 14 | SCN | |
| TXD_FIN | Serial I/F data (Finisher) | Serial I/F data (PCU PWB - Finisher) | — | — | 17 | 11 | PCU | |
| TXD_LCC | Serial I/F data (LCC) | Serial I/F data (Controller - Scanner control PWB) | — | — | 18 | 3 | PCU | |
| TXD_SCN | Serial I/F data (Scanner control PWB) | Serial I/F data (Controller - Scanner control PWB) | — | — | 9 | 8 | SCN | |
| VCCW_SCN | Scanner flash ROM write protect signal | Scanner flash ROM write protect | | Write enable | 9 | 10 | SCN | |
| VFM-BKL | Exhaust fan motor control signal (Rear left) | Exhaust fan motor control signal (O ³ exhaust, process section heat exhaust) | Max. force of wind | Stop | 5 | 22 | PCU | |
| VFM-BKR | Exhaust fan motor control signal (Rear right) | Exhaust fan motor control signal (Exhaust, duplex (ADU) section cooling) | Max. force of wind | Stop | 6 | 17 | PCU | |
| VFM-EX1 | Exhaust fan motor control signal (LSU top plate front side) | Exhaust fan motor control signal (O ³ exhaust, process section heat exhaust) | Max. force of wind | Stop | 5 | 4 | PCU | |
| VFM-EX2 | Exhaust fan motor control signal (LSU top plate center) | Exhaust fan motor control signal (O ³ exhaust, process section heat exhaust) | Max. force of wind | Stop | 5 | 10 | PCU | |
| VFM-EX3 | Exhaust fan motor control signal (LSU top plate rear side) | Exhaust fan motor control signal (O ³ exhaust, process section heat exhaust) | Max. force of wind | Stop | 5 | 16 | PCU | |

| Signal name | Name | Function/Operation | Connector level | | Connector No. | Pin No. | PWB name | Remark |
|-------------|---|--|-------------------|-----------|---------------|---------|----------|--------|
| | | | "L" | "H" | | | | |
| VIDEO | Image signal | Image signal to LSU | — | — | 20 | 21 | PCU | |
| VIDEOin- | Image signal | Image signal from controller to PCU PWB | — | — | 9 | 21 | PCU | |
| VIDEOin+ | Image signal | Image signal from controller to PCU PWB | — | — | 9 | 23 | PCU | |
| VPMA | Paper transport motor control signal (Phase A) | Paper vertical transport motor control (Phase A) | — | — | 10 | 21 | PCU | |
| VPMB | Paper transport motor control signal (Phase B) | Paper vertical transport motor control (Phase B) | — | — | 10 | 23 | PCU | |
| VPMXA | Paper transport motor control signal (Phase /A) | Paper vertical transport motor control (Phase /A) | — | — | 10 | 22 | PCU | |
| VPMXB | Paper transport motor control signal (Phase /B) | Paper vertical transport motor control (Phase /B) | — | — | 10 | 24 | PCU | |
| VRB | Laser power control signal | Laser power control | — | — | 22 | 17 | PCU | |
| WAKE UP | Reset trigger signal from energy-saving mode | Reset trigger from energy saving mode | Energy-save reset | | 9 | 11 | SCN | |
| WHPR2 | Dehumidifier heater power relay 2 control signal | Dehumidifier heater control | Relay ON | Relay OFF | 19 | 18 | PCU | |
| XH | Touch panel area identification signal (Vertical direction) | Touch panel area identification (Vertical direction) X axis | — | — | 1 | 96 | SCN | |
| XL | Touch panel coordinates signal (Vertical direction) | Touch panel coordinates identification (Vertical direction) X axis | — | — | 1 | 46 | SCN | |
| YH | Touch panel area identification signal (Horizontal direction) | Touch panel area identification (Horizontal direction) Y axis | — | — | 1 | 45 | SCN | |
| YL | Touch panel coordinate signal (Horizontal direction) | Touch panel coordinates identification (Horizontal direction) Y axis | — | — | 1 | 95 | SCN | |

*1: Multi-stage tray vertical size detection

| | Vertical size detection: Connector level | | | | Paper size | | |
|--------------------|--|-------|-------|-------|--------------------|-------------|--------------|
| Multi-stage tray 1 | M1SS1 | M1SS2 | M1SS3 | M1SS4 | AB series | Inch series | China series |
| Multi-stage tray 2 | M2SS1 | M2SS2 | M2SS3 | M2SS4 | | | |
| 1 | L | L | H | L | B5 | Extra | K16 |
| 2 | H | L | H | L | A4 A5R | LT INVR | A4 A5R |
| 3 | H | L | L | L | B5R | EX-R | K16R |
| 4 | H | H | L | L | A4R | LTR | A4R |
| 5 | L | H | L | L | Foolscap | Extra | Foolscap |
| 6 | L | H | L | H | B4 | LGL | K8 |
| 7 | L | L | L | H | A3 | WLT | |
| 0 | H | H | H | H | Tray not installed | | |

*2: Options

| No. | CV_SIZE3 | CV_SIZE2 | CV_SIZE1 | CV_SIZE0 | Paper size |
|-----|----------|----------|----------|----------|------------|
| 0 | 0 | 0 | 0 | 0 | none |
| 1 | 0 | 0 | 0 | 1 | A3 |
| 2 | 0 | 0 | 1 | 0 | A4 |
| 3 | 0 | 0 | 1 | 1 | LT |
| 4 | 0 | 1 | 0 | 0 | B4 |
| 5 | 0 | 1 | 0 | 1 | LG |
| 6 | 0 | 1 | 1 | 0 | WLT |
| 7 | 0 | 1 | 1 | 1 | INV |
| 8 | 1 | 0 | 0 | 0 | B5 |
| 9 | 1 | 0 | 0 | 1 | Extra |
| 10 | 1 | 0 | 1 | 0 | A5 |
| 11 | 1 | 0 | 1 | 1 | F4 |
| 12 | 1 | 1 | 0 | 0 | A4R |
| 13 | 1 | 1 | 0 | 1 | B5R |
| 14 | 1 | 1 | 1 | 0 | LTR |
| 15 | 1 | 1 | 1 | 1 | A5R |

Memo

Handwriting practice lines consisting of 20 horizontal dashed lines.

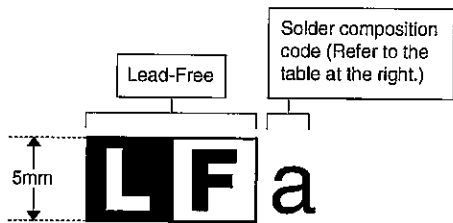
Memo

Handwriting practice lines consisting of 20 horizontal dashed lines.

LEAD-FREE SOLDER

The PWB's of this model employs lead-free solder. The "LF" marks indicated on the PWB's and the Service Manual mean "Lead-Free" solder. The alphabet following the LF mark shows the kind of lead-free solder.

Example:



<Solder composition code of lead-free solder>

| Solder composition | Solder composition code |
|-------------------------|-------------------------|
| Sn-Ag-Cu | a |
| Sn-Ag-Bi Sn-Ag-Bi-Cu | b |
| Sn-Zn-Bi | z |
| Sn-In-Ag-Bi | i |
| Sn-Cu-Ni | n |
| Sn-Ag-Sb | s |
| Bi-Sn-Ag-P Bi-Sn-Ag | p |

(1) NOTE FOR THE USE OF LEAD-FREE SOLDER THREAD

When repairing a lead-free solder PWB, use lead-free solder thread.

Never use conventional lead solder thread, which may cause a breakdown or an accident.

Since the melting point of lead-free solder thread is about 40°C higher than that of conventional lead solder thread, the use of the exclusive-use soldering iron is recommendable.

(2) NOTE FOR SOLDERING WORK

Since the melting point of lead-free solder is about 220°C, which is about 40°C higher than that of conventional lead solder, and its soldering capacity is inferior to conventional one, it is apt to keep the soldering iron in contact with the PWB for longer time. This may cause land separation or may exceed the heat-resistive temperature of components. Use enough care to separate the soldering iron from the PWB when completion of soldering is confirmed.

Since lead-free solder includes a greater quantity of tin, the iron tip may corrode easily. Turn ON/OFF the soldering iron power frequently.

If different-kind solder remains on the soldering iron tip, it is melted together with lead-free solder. To avoid this, clean the soldering iron tip after completion of soldering work.

If the soldering iron tip is discolored black during soldering work, clean and file the tip with steel wool or a fine filer.

CAUTION FOR BATTERY REPLACEMENT

(Danish)

ADVARSEL !

Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.

Udskiftning må kun ske med batteri

af samme fabrikat og type.

Levér det brugte batteri tilbage til leverandoren.

(English)

Caution !

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type

recommended by the manufacturer.

Dispose of used batteries according to manufacturer's instructions.

(Finnish)

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.

Vaihda paristo ainoastaan laitevalmistajan suosittelemaan

tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden

mukaisesti.

(French)

ATTENTION

Il y a danger d'explosion s' il y a remplacement incorrect

de la batterie. Remplacer uniquement avec une batterie du

même type ou d'un type équivalent recommandé par

le constructeur.

Mettre au rebut les batteries usagées conformément aux

instructions du fabricant.

(Swedish)

VARNING

Explosionsfara vid felaktigt batteribyte.

Använd samma batterityp eller en ekvivalent

typ som rekommenderas av apparatillverkaren.

Kassera använt batteri enligt fabrikantens

instruktion.

(German)

Achtung

Explosionsgefahr bei Verwendung inkorrektter Batterien.

Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder

vom Hersteller empfohlene Batterien verwendet werden.

Entsorgung der gebrauchten Batterien nur nach den vom

Hersteller angegebenen Anweisungen.

CAUTION FOR BATTERY DISPOSAL

(For USA, CANADA)

"BATTERY DISPOSAL"

THIS PRODUCT CONTAINS A LITHIUM PRIMARY
(MANGANESE DIOXIDE) MEMORY BACK-UP BATTERY
THAT MUST BE DISPOSED OF PROPERLY. REMOVE THE
BATTERY FROM THE PRODUCT AND CONTACT YOUR
LOCAL ENVIRONMENTAL AGENCIES FOR INFORMATION
ON RECYCLING AND DISPOSAL OPTIONS.

"TRAITEMENT DES PILES USAGÉES"

CE PRODUIT CONTIENT UNE PILE DE SAUVEGARDE DE
MÉMOIRE LITHIUM PRIMAIRE (DIOXYDE DE MANGANÈSE)
QUI DOIT ÊTRE TRAITÉE CORRECTEMENT. ENLEVEZ LA
PILE DU PRODUIT ET PRENEZ CONTACT AVEC VOTRE
AGENCE ENVIRONNEMENTALE LOCALE POUR DES
INFORMATIONS SUR LES MÉTHODES DE RECYCLAGE ET
DE TRAITEMENT.

SHARP®

COPYRIGHT © 2004 BY SHARP CORPORATION

All rights reserved.

Printed in Italy.

No part of this publication may be reproduced,
stored in a retrieval system, or transmitted,
in any form or by any means,
electronic; mechanical; photocopying; recording or otherwise
without prior written permission of the publisher.

Trademark acknowledgements

- Microsoft® Windows® operating system is a trademark or copyright of Microsoft Corporation in the U.S.A. and other countries.
- Windows® 95, Windows® 98, Windows® Me, Windows NT® 4.0, Windows® 2000, and Windows® XP are trademarks or copyrights of Microsoft Corporation in the U.S.A. and other countries.
- IBM and PC/AT are trademarks of International Business Machines Corporation.
- Acrobat® Reader Copyright® 1987- 2002 Adobe Systems Incorporated. All rights reserved. Adobe, the Adobe logo, Acrobat, and the Acrobat logo are trademarks of Adobe Systems Incorporated.
- All other trademarks and copyrights are the property of their respective owners.

SHARP CORPORATION
Digital Document System Group
Products Quality Assurance Department
Yamatokoriyama, Nara 639-1186, Japan
2004 March Printed in Italy